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U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., December 15, 1908.

DEPTH OF SNOW.

At 8 p. m., December 14, 1908, the ground was covered with snow from 3 to 10 inches in depth over the interior of New England, locally in northern and western New York, at a few points in Pennsylvania, in the northern portions of Michigan, Wisconsin, and Minnesota, over most of North Dakota, and at points in the Rocky Mountain districts.

Traces of snow extended southward into the mountains of Virginia and to the central portions of Ohio, Indiana, Illinois, and Iowa.

There was but little snow in the Great Plains region and none was reported from the lower elevations of Montana and Wyoming.

As compared with the depth on ground at 8 p. m. of the 7th there was from 2 to 6 inches increase in depth from central Pennsylvania northeastward over New York and New England and over the upper Lake region, and a slight increase at a few points in the mountain districts.

Over the lower lakes and the upper Mississippi and lower Missouri valleys there was a general decrease in depth from last week, ranging from 1 to 4 inches. Decreases of from 3 to 4 inches were also reported from points in Colorado and northern Utah.

Compared with the depth on ground at the same date in 1907, there was from 3 to 9 inches less snow in southern New England, the Middle Atlantic States, lower Lake region, and portions of the middle Mississippi and lower Missouri valleys.

There was slightly more snow in northern New England and considerably more in portions of the upper Lake region and North Dakota than on the same date in 1907.

ICE IN RIVERS, HARBORS, ETC.

The continuation of rather mild weather during the week prevented any marked increase in the thickness of ice or its extension further southward in the various rivers and lakes, over the conditions that prevailed during the preceding week.

Slight increases occurred in the interior of New England, where a maximum thickness of 13 inches was reported. There was some ice also at a few points in the lower Lakes where none was reported last week, and small increases occurred in the amount of ice at most points in the upper portions of the Mississippi and Missouri rivers.

No ice was reported in the Mississippi River below Hannibal or in the Missouri River below Omaha.

In the upper Missouri the thickness ranges from 4 inches at Omaha to 9 inches at Bismarck, and in the upper Mississippi from 3.5 inches at Keokuk to 6 inches at St. Paul, with much open water at points between.

As compared with the same date in 1907, the thickness of the ice this year is in excess in all districts from which reports are received, except in the upper Missouri River, where at Bismarck and Williston the amounts are less than a year ago.

The following special reports have been received:

Albany, N. Y., December 15.—In the Hudson Valley the depth of snow ranges from 1 inch at Athens to 6 inches at Corinth; in the Mohawk Valley it averaged 5 inches. The thickness of ice in the Mohawk and upper Hudson rivers ranges from 1 inch to 7 inches, but there is only floating ice in the Hudson from Troy southward.

Binghamton, N. Y., December 15.—The depth of snow ranges from a trace at Binghamton to an average of 5 inches in the upper portion of the Susquehanna, Unadilla, and Chenango watersheds.

Dubuque, Iowa, December 14.—The Mississippi River is closed above the drawbridge by an ice gorge, but is open below the bridge.

Hannibal, Mo., December 14.—There is a little floating ice in the Mississippi River.

Williston, N. Dak., December 14.—The ice is melting.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., DECEMBER 14, 1908.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
<i>Arizona.</i>	<i>Inches</i>	<i>Inches</i>	<i>Michigan</i> —Cont'd.	<i>Inches</i>	<i>Inches</i>	<i>North Dakota.</i>	<i>Inches</i>	<i>Inches</i>
Flagstaff.....	T.		Houghton.....	7	5.0	Bismarck.....	3	9.0
<i>Colorado.</i>			Ironwood.....	6		Devils Lake.....	4	
Denver.....	3		Lamont.....	2		Williston.....	T.	0.0
Durango.....	3		Mackinaw City.....	9		Bangorville.....	T.	
Grand Junction.....	T.		Milwaukee.....	16		Cadiz.....	T.	
<i>Connecticut.</i>			Marquette.....	6	0.0	Garrettsville.....	T.	
Hartford.....	T.	0.5	Onaway.....	4		Sandusky.....		2.5
West Cornwall.....	5		Port Huron.....	1	0.0	Oregon.		
West Simsbury.....	1		Saginaw.....	3		Baker City.....	1	
<i>Idaho.</i>			Sault Ste. Marie.....	10	0.0	Pennsylvania.		
Bolse.....	T.		St. Ignace.....	7		Baldwin.....	4	
Pocatello.....	1	0.0	Woodlawn.....	9		East Mauch Chunk.....	4	
Wallace.....	1		<i>Minnesota.</i>			Ephrata.....	T.	
<i>Illinois.</i>			Bird Island.....	T.		Gettysburg.....	T.	
Chicago.....	T.		Collegeville.....			Detroit.....	8	
Martin.....	T.		Duluth.....	1	8.5	Harrisburg.....	T.	0.0
Monmouth.....	T.		Grand Meadow.....	1		Millington.....	5	
Winnebago.....	3		Hinckley.....	3		Pittsburg.....	T.	0.0
<i>Indiana.</i>			Moorehead.....	6	9.0	St. Marys.....	6	
La Fayette.....	T.		Reeds.....	T.		Selins Grove.....	4	
Marion.....	T.		St. Paul.....	6	0.0	Towanda.....	2	
<i>Iowa.</i>			<i>Missouri.</i>			Warren.....	3	
Charles City.....	T.		Hannibal.....	*		Williamsport.....	2	
Davenport.....	T.	0.0	<i>Montana.</i>			<i>South Dakota.</i>		
Des Moines.....	T.	4.0	Miles City.....	T.		Huron.....	7.5	
Dubuque.....	3	0.0	Nebaska.			Pierre.....	T.	0.0
Estherville.....	T.		Omaha.....	4.0		Rapid City.....	T.	
Keokuk.....	3.5		Valentine.....	T.		Yankton.....	4.0	
Marshalltown.....	T.		<i>New Hampshire.</i>			Utah.		
Sioux City.....	4.0		Bethlehem.....	8		Salt Lake City.....	T.	
Waterloo.....	T.		Concord.....	4	1.5	Vermont.		
<i>Kansas.</i>			Durham.....	6		Brattleboro.....	4	6.0
Coldidge.....	1		Keene.....	4		Burlington.....	5	0.0
<i>Maine.</i>			<i>New Jersey.</i>			Northfield.....	7	
Bangor.....	5	5.0	Bethel.....	T.		<i>Virginia.</i>		
Buckfield.....	6		Belvidere.....	T.		Dale Enterprise.....	T.	
Cornish.....	8		Charlottesville.....	T.		Washington.....	T.	
Eastport.....	1	1.5	Flemington.....	T.		Spokane.....	T.	
Gardiner.....	6	2.0	<i>New Mexico.</i>			West Virginia.		
Greenville.....	5	13.0	Lewisburg.....	T.		Elkins.....	T.	0.0
Greenwood.....	6	7.0	McKinley.....	T.		Grafton.....	T.	
Millinocket.....	10		Montgomery.....	T.		<i>Wisconsin.</i>		
Orono.....	5		Orono.....	T.		Ashland.....	2	
Portland.....	8		Addison.....	T.		Eau Claire.....	1	
<i>Maryland.</i>			Auburn.....	1		Grand Rapids.....	4	
Grantsville.....	3		Binghamton.....	T.		Green Bay.....	3	4.0
<i>Massachusetts.</i>			Buffalo.....	1	0.0	Koopenick.....	6	
Amherst.....	4		Canton.....	6		La Crosse.....	T.	6.0
Boston.....	1		Cooperstown.....	5		Madison.....	3	
Concord.....	3		Cutchogue.....	T.		Medford.....	3	
Fitchburg.....	6		De Ruyter.....	3		Milwaukee.....	2	0.0
Mansfield.....	T.		Franklinville.....	5		New London.....	5	
<i>Michigan.</i>			Ithaca.....	T.		Portage.....	3	
Alpena.....	5	0.0	Keuka Park.....	T.		Radine.....	T.	
Ann Arbor.....	T.		Le Roy.....	T.		Spooner.....	1	
Battle Creek.....	2		Oswego.....	4	1.5	Viroqua.....	T.	
Big Rapids.....	3		Plattsburgh.....	4		Wausau.....	2	
Calumet.....	6		Port Jervis.....	1	0.0	Waupaca.....	4	
Chatham.....	7		Rochester.....	T.		<i>Wyoming.</i>		
Detroit.....	T.	2.0	Saranac Lake.....	4		Sheridan.....	3	
Esopus.....	2	+	Syracuse.....	T.		Yellowstone Park.....	3	
Grand Haven.....	2	0.0	T.					
Grand Marais.....	11		Watertown.....	4				
Grand Rapids.....	1		Wedgewood.....	1				
Hillsdale.....	2							

* Floating ice.

† Shore ice.

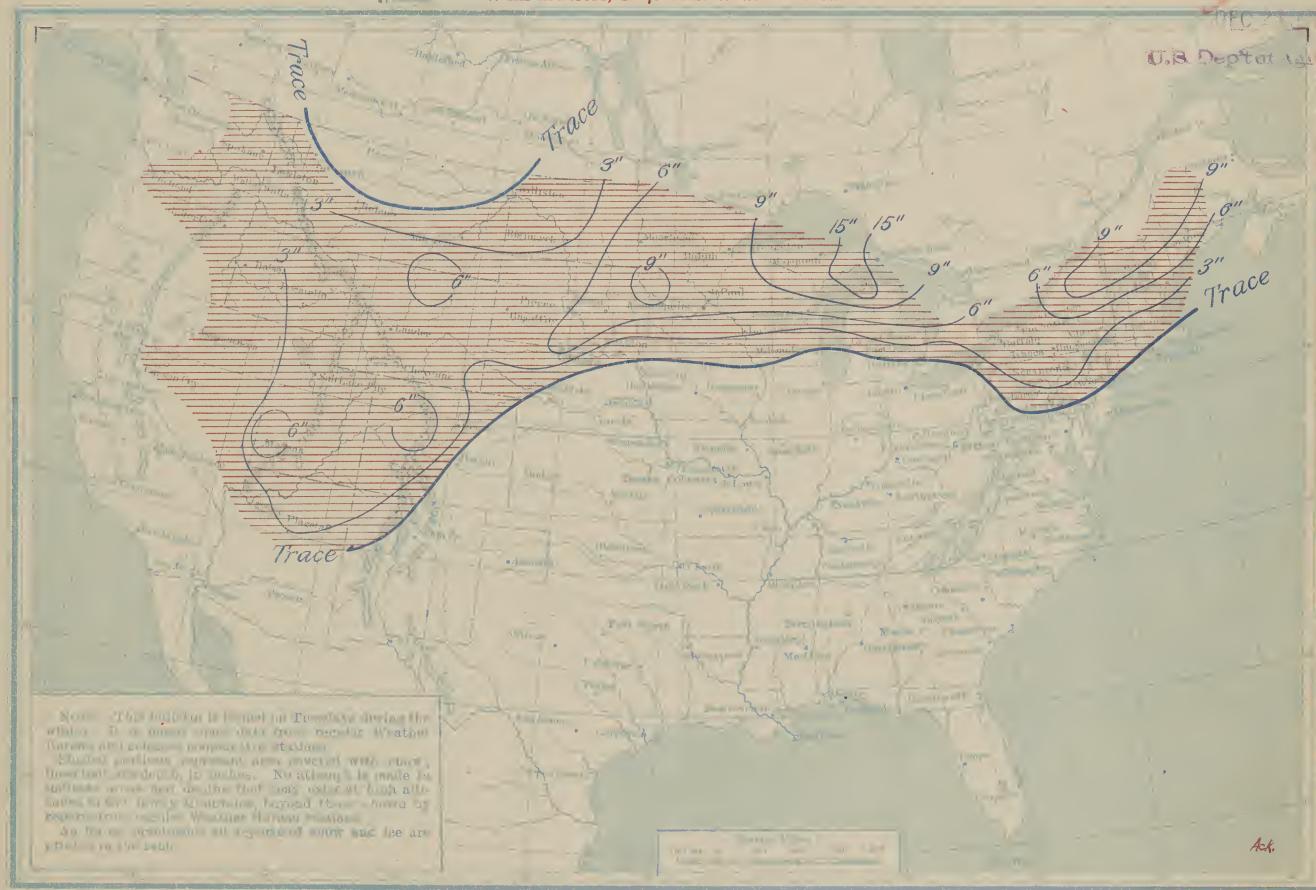
T. indicates trace.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.

Bureau of the Census



WASHINGTON, D. C., December 22, 1908.

DEPTH OF SNOW.

The extensive storm area that developed over the southern Rocky Mountain district on the 16th and moved northeastward over the Lake region and New England during the 17th and 18th was accompanied by snow over the first-named region, and along the northern limits, and by rain over the central and southern limits of its passage eastward. The result was a considerable increase in the depths of snow over those reported last week in the central Rocky Mountain States, and over the middle Missouri and upper Mississippi valleys, Lake region, New York, and New England.

The general rains over the Mississippi and Ohio valleys and thence eastward diminished the stock of snow somewhat over the southern portion of the area covered by snow last week, and the southern limit is now somewhat farther north than then.

Over New England and the northern portions of the Middle Atlantic States the depth of snow has increased from 2 to 4 inches, with depths ranging from 6 to 10 inches in northern New York and the interior of New England, and with maximum depths of 20 inches or more in the Adirondack region. Over the upper Lakes the increase ranged from 2 to 6 inches, with accumulated depths from 6 to 15 inches. In the upper Mississippi and middle Missouri valleys the increases ranged from 2 to 10 inches, and similar increases occurred in the central Rocky Mountain and eastern Plateau districts.

ICE IN RIVERS, HARBORS, ETC.

Comparatively warm weather again prevailed during the week over most districts, and the ice conditions as reported last week have not materially changed.

There has been a slight increase in thickness over the upper Mississippi and portions of the middle Missouri valleys, where the thickness now ranges from 1.5 inches at Keokuk to 8 inches at La Crosse, and from 2.5 inches at Omaha to 6 inches at Yankton, with 11.5 inches at Huron, S. Dak., on the James River and 10 inches at Moorhead on the Red River of the North.

There has also been some increase of ice in the protected harbors of Lake Superior and along the western shore of Lake Michigan, where the thickness ranges from 5.5 inches at Green Bay, Wis., to 10.5 inches at Duluth, Minn.

No increases are noted in the lower Lake region or Middle Atlantic States, but in New England slight increases are reported and the thickness now ranges from 8 inches in the Connecticut River in southern Vermont to 14 inches in the interior districts of Maine.

Compared with the same period one year ago there is now considerably more ice in the upper Mississippi and middle Missouri valleys and in New England, and less in the lower Lakes and the upper Missouri Valley.

The following special reports have been received:

Bangor, Me., December 21.—The ice in the Penobscot River is 4.5 inches thick.

Gardiner, Me., December 21.—The thickness of ice in the Kennebec River here is 4 inches.

Leviston, Me., December 22.—The ice in the Androscoggin River is 8 inches thick.

Brattleboro, Vt., December 21.—The ice in the Connecticut River here is 8 inches in thickness.

Hartford, Conn., December 21.—In the Housatonic Valley there are 4 inches of snow; in the Connecticut Valley the depths vary from 3 inches in Connecticut to 12 inches at the Canada line. The Connecticut River is frozen above Hartford, but open below to Long Island Sound.

Albany, N. Y., December 22.—In the Hudson Valley the depth of snow ranges from 2 inches at Athens to 7 inches at Corinth; in the Mohawk Valley it averages 2 inches. The thickness of ice in the Mohawk and upper Hudson rivers ranges from 2 to 7 inches, but the Hudson is only partly frozen from Troy southward.

Binghamton, N. Y., December 22.—The depth of snow ranges from 3 to 7 inches, not much drifted. The deepest snow reported in this vicinity is 7 inches, at New Milford, Pa., and Edmeston, N. Y.

Dubuque, Iowa, December 21.—The Mississippi River is still open below the drawbridge, but the ice is gorged above the bridge.

Hammond, Mo., December 21.—There is a little thin floating ice in the Mississippi River.

Sioux City, Iowa, December 22.—The ice in the Missouri River is submerged so the thickness is merely estimated.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., DECEMBER 21, 1908.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	Michigan—Cont'd.	Inches	Inches	New York—Cont'd.	Inches	Inches
Flagstaff	5	.....	Marguerite	11	0.0	Saranac Lake	8	.....
Colorado.	.....	.....	Port Huron	6	0.0	Setauket	T.	.....
Denver	4	5	Sault Ste. Marie	10	0.0	Shortsville	1	.....
Durango	5	.....	St. Ignace	5	.....	Syracuse	T.	.....
Grand Junction	5	.....	Woodlawn	12	.....	Watertown	8	.....
Leadville	8	.....	Minnesota.	.....	.....	Wedgewood	5	.....
Connecticut.	.....	.....	Bird Island	8	.....	North Dakota.	.....	.....
Hartford	1	*	Collegeville	6	.....	Devils Lake	4	.....
New Haven	3	.....	Duluth	3	10.5	Williston	T.	3.0
West Simsbury	2	.....	Fairbault	6	.....	Oregon.	.....	.....
Idaho.	.....	.....	Farmington	7	.....	Baker City	T.	.....
Boise	T.	.....	Grand Meadow	7	.....	Portland	T.	0.0
Pocatello	3	0.0	Hinckley	6	.....	Pennsylvania.	.....	.....
Wallace	1	.....	Mankato	6	.....	Altoon	1	.....
Iowa.	.....	.....	Milan	10	.....	Clearfield	4	.....
Charles City	T.	.....	Minneapolis	7	.....	East Mauch Chunk	4	.....
Davenport .....	.....	*	Moorhead	6	10.0	Gordon	5	.....
Des Moines	4.5	.....	Reeds	6	.....	Harrisburg	T.	0.0
Dubuque	T.	0.0	St. Paul	7	7.0	Mifflintown	9	.....
Esterhazy	4	.....	Missouri.	.....	St. Marys	5	.....
Keokuk	1.5	.....	Hanibal .....	.....	Scranton	4	.....
Sioux City	3.5	.....	Montana.	.....	State College	4	.....
Maine.	.....	.....	Kalispell	T.	.....	Towanda	6	.....
Bangor	8	4.5	Nebraska.	.....	Williamsport	2	.....
Buckfield	7	.....	Omaha	2.5	.....	South Dakota.	.....	.....
Cornish	11	.....	Valentine	7	.....	Huron	7	11.5
Danforth	6	.....	Nevada.	.....	Pierre	3	0.0	
Eastport	2	7.0	Reno	T.	.....	Rapid City	4	.....
Gardiner	6	4.0	New Hampshire.	.....	Yankton	2	6.0	
Greenville	8	14.0	Bethlehem	10	.....	Utah.	.....	.....
Leviston	7	8.0	Concord	4	2.0	Modena	6	.....
Millinocket	12	.....	Durham	7	.....	Salt Lake City	4	.....
Orono	9	.....	Keene	5	.....	Vermont.	.....	.....
Portland	6	0.0	New Jersey.	.....	Brattleboro	5	8.0	
Massachusetts.	.....	.....	Flemington	T.	.....	Burlington	4	0.0
Amherst	2	.....	Newark	T.	.....	Northfield	10	.....
Boston	T.	.....	New York.	.....	Washington.	.....	.....
Concord	3	.....	Addison	4	.....	Spokane	T.	.....
Fitchburg	3	.....	Albany	1	0.0	Wisconsin.	.....	.....
Mansefield	T.	.....	Beaver River	24	.....	Eau Claire	7	.....
North Adams	5	.....	Binghamton	3	.....	Green Bay	7	5.5
Michigan.	.....	.....	Buffalo	2	0.0	Koopenick	12	.....
Alpena	8	0.0	Canton	6	.....	La Crosse	4	8.0
Big Rapids	9	.....	Cutchogue	T.	.....	Lake Mills	2	.....
Calumet	9	.....	De Ruyter	5	.....	Madison	1	.....
Chatham	11	.....	Franklinville	5	.....	Minoqua	7	.....
Detroit	1	2.0	Geneva	3	.....	Mount Horeb	3	.....
Escanaba	8	0.0	Herkimer	2	.....	New London	13	.....
Grand Haven	2	0.0	Ithaca	3	.....	Portage	8	.....
Grand Marais	16	.....	Keuka Park	4	.....	Sheboygan	7	.....
Grand Rapids	2	.....	Le Roy	3	.....	Viroqua	5	.....
Houghton	12	8.0	Lowville	12	.....	Wauau	9	.....
Iron River	14	.....	Malone .....	.....	Wyoming.	.....	.....
Ironwood	10	.....	Oswego	3	0.0	Lander	5	.....
Lansing	4	.....	Port Jervis	3	.....	Sheridan	6	.....
Macelona	20	Rochester	1	0.0	Yellowstone Park	4
Maple Ridge	14	Rome	6			

* Floating ice. † Shore ice.

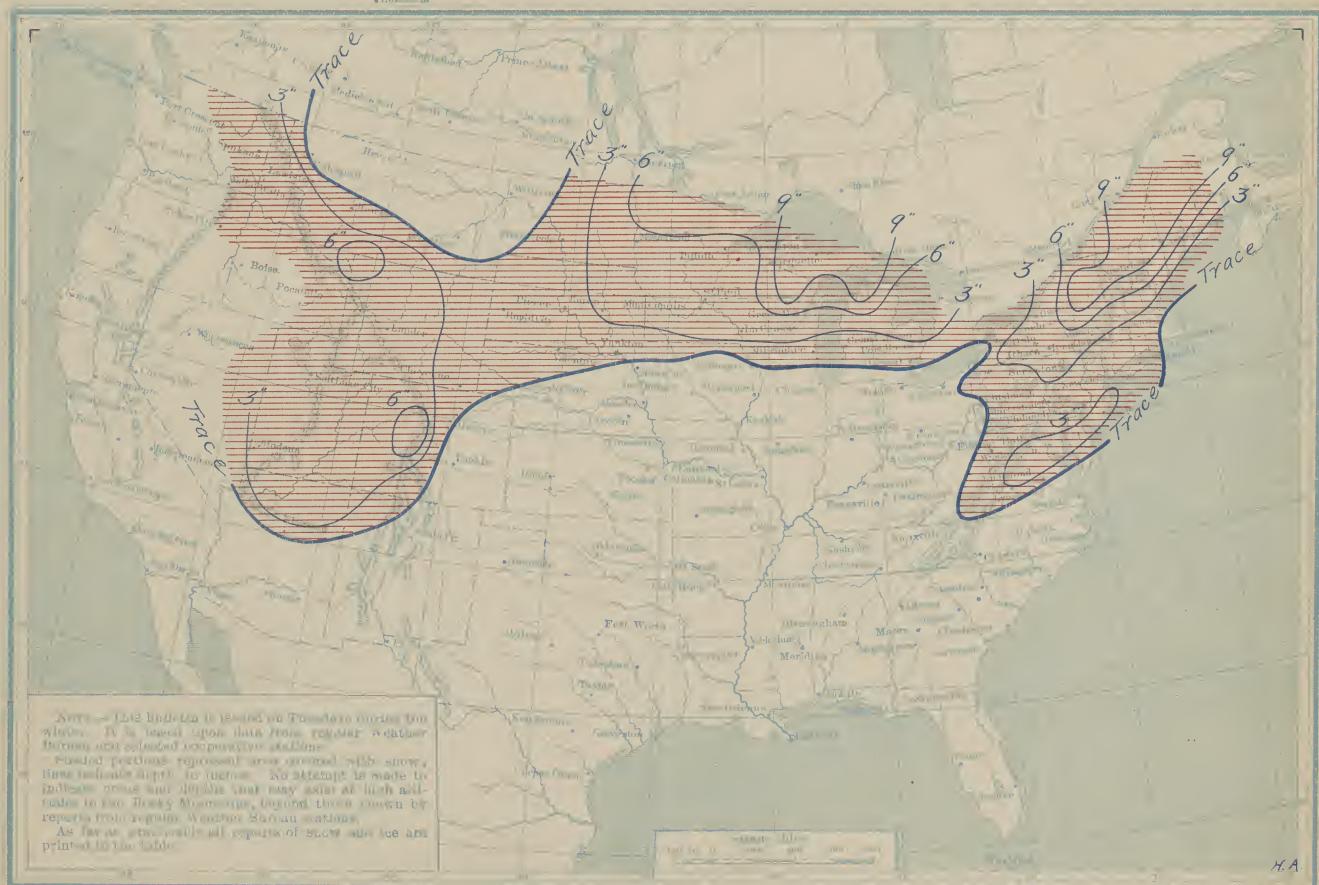
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SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.

1 JAN 2 1909
U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF STATISTICS



WASHINGTON, D. C., December 29, 1908.

DEPTH OF SNOW.

The storm that developed over the Gulf States on Monday, the 21st, and moved northeasterly along the Atlantic coast during the 22d and 23d, was accompanied by unusually heavy snowfall from Virginia to New York. Aside from the above storm, no general disturbance crossed the interior portions of the United States during the week, and, except locally, the amounts of snow on the ground has decreased over that period one week ago.

There is now from 3 to 12 inches of snow on the ground over northern New England and the northern and western parts of New York and Pennsylvania, with extreme depths of about 2 feet at points in the Adirondack Mountains. A large part of the snow from the storm of the 22-23d along the Atlantic coast from Virginia to New York has disappeared, but over portions of northern Virginia, central Maryland, and southern New Jersey there still remains from 3 to 6 inches.

There is but little snow in the lower Lake region and practically none in the Ohio, middle Mississippi, and lower Missouri valleys. Over the upper Lakes, upper Mississippi, and Red River of the North valleys the depth of snow ranges from 3 to 9 inches, with extreme depths of 12 to 24 inches at a few points in northern Michigan.

There is but little snow in the upper Missouri Valley or over the Great Plains, and the amounts at the lower elevations of the Rocky Mountain districts are generally less than 5 inches, and over the lower elevations of the Plateau and Pacific coast States there is practically no snow.

ICE IN RIVERS, HARBORS, ETC.

In the absence of any decided cold weather during the past week the ice conditions have not materially varied from those reported during the previous two weeks. As a rule there has been a slight increase over the districts where ice was reported last week, but there has been no appreciable extension southward during the week, and at a few points, especially in the middle Missouri Valley, the ice does not extend as far south as was reported last week.

On the rivers of interior New England the thickness of the ice ranges from 3 to 15 inches, being an increase of about 1 inch during the week.

There is still practically no ice in the rivers of the Middle Atlantic States, the lower Lakes, and the Ohio Valley. In the Mississippi River there is but little ice south of Keokuk, and in the Missouri River there is practically none south of Sioux City.

The extreme thickness in the upper Missouri is 11.5 inches at Bismarck, N. Dak., in the upper Mississippi, 9.5 inches at La Crosse, Wis., and in the smaller tributaries of these rivers in Iowa, Minnesota, and the Dakotas the thickness ranges from 4 to 13 inches.

On the upper Lakes the ice in the protected harbors along the western shore of Lake Michigan and the southern shore of Lake Superior ranges from 3 to 12 inches in thickness.

Compared with the same date in 1907 there is now more ice in the rivers of New England, in the upper Mississippi River, and at points in the middle Missouri Valley and upper Lake region, and from 2 to 9 inches less in the upper Missouri River.

The following special reports have been received:

Hartford, Conn., December 28.—In the Housatonic Valley the depth of snow ranges from 2 to 3 inches; in the Connecticut Valley from a trace at Hartford to 18 inches in the upper portion. The Connecticut is open for navigation below Hartford, but above that point the ice ranges from 4 inches at Holyoke to 8 at White River junction.

Albany, N. Y., December 29.—In the Hudson and Mohawk valleys the snow averages 3 inches in depth. The ice in the rivers averages about 3 inches in thickness, but the Hudson is mostly open south of Albany.

Binghamton, N. Y., December 29.—The average depth of snow in the Susquehanna, Chenango, and Tioughnioga watersheds is 5 inches; in the Unadilla watershed, 7 inches. The greatest depth reported is 8 inches at Alford, Pa.; the least, 3, at Binghamton.

F. H. BIGELOW, Professor of Meteorology

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., DECEMBER 28, 1908.

Stations.	Snow.	To in rivers, har- bors, etc.	Stations.	Snow.	To in rivers, har- bors, etc.	Stations.	Snow.	To in rivers, har- bors, etc.
Arizona.	Inches	Inches	Minnesota—Cont'd.	Inches	Inches	Pennsylvania.	Inches	Inches
Flagstaff	3	.....	Collegeville	4	.....	Baldwin	T.	.....
Colorado.	.....	.....	Crookston	6	.....	East Manch Chunk	5	.....
Durango	2	.....	Detroit	5	.....	Ephrata	1	.....
Grand Junction	3	.....	Duluth	2	12.0	Gettysburg	T.	.....
Loveland	7	.....	Faribault	5	.....	Harrisburg	T.	0.0
Connecticut.	.....	.....	Farmington	4	.....	Latrobe	1	.....
Hartford	T.	*	Fort Ripley	4	.....	Mifflintown	2	.....
New Haven .....	.....	.....	Grand Meadow	7	.....	Monroe	7	.....
West Simsbury	1	.....	Hinckley	5	.....	Philadelphia	T.	0.0
Delaware.	.....	.....	Mankato	4	.....	Ridgeway	3	.....
Millsboro	1	.....	Milan	5	.....	Scranton	2	.....
Dist. of Columbia.	.....	.....	Minneapolis	5	.....	Selins Grove	3	.....
Washington	3	0.0	Moorhead	5	12.0	State College	1	.....
Idaho.	.....	.....	Reeds	5	.....	Towanda	3	.....
Wallace	5	.....	St. Paul	5	8.5	Rhode Island.	.....	.....
Iowa.	.....	.....	Worthington	2	.....	Block Island	T.	0.0
Davenport .....	*	.....	Missouri.	.....	.....	South Dakota.	.....	.....
Des Moines	4.0	.....	Mississippi.	.....	.....	Sioux City.	4	13.0
Estherville	2	.....	Minneapolis .....	.....	.....	Pierre	3	0.0
Keokuk	3.5	.....	Montana.	.....	.....	Rapid City	T.	.....
Sioux City	2.5	.....	Helena	T.	.....	Yankton	T.	6.0
Maine.	.....	.....	Nebaska.	.....	.....	Utah.	.....	.....
Bangor	5	4.0	Nebraska.	.....	.....	Modena	4	.....
Cornish	10	9.5	Valentine	1	.....	Salt Lake City	3	.....
Danforth	5	.....	Wilmington	13	.....	Vermont.	.....	.....
Eastport	9.5	.....	Concord	4	3.0	Brattleboro	4	9.5
Gardiner	6	5.0	Durham	3	.....	Burlington	4	0.0
Greenville	14.5	9.5	Keene	5	.....	St. Johnsbury	14	.....
Lewiston	6	9.5	New Jersey.	.....	.....	Virginia.	.....	.....
Millinocket	13	.....	Ashbury Park	3	.....	Burke's Garden	4	.....
Orono	6	2.0	Bridgeton	T.	0.0	Dale Enterprise	4	.....
Portland	2	0.0	Cape May	2	.....	Fredericksburg	2	.....
Maryland.	.....	.....	Hightstown	3	.....	Lynchburg	2	0.0
Baltimore	T.	0.0	Tuckerton	3	.....	Mount Weather	4	.....
Easton	2	.....	New York.	.....	Richmond	T.	0.0	
Frederick	1	.....	Addison	3	.....	Stephens City	T.	0.0
Massachusetts.	.....	.....	Albany	T.	1.0	Williamsburg	T.	2
Amherst	1	.....	Beaver River	25	.....	Woodstock	2	.....
Concord	T.	.....	Binghamton	3	.....	Wytheville	1	.....
Fitchburg	1	.....	Canton	5	.....	Washington.	.....	.....
Michigan.	.....	.....	Cooperstown	5	.....	Spokane	1	.....
Alpena	5	0.0	Franklinville	4	.....	West Virginia.	.....	.....
Battle Creek	T.	.....	Geneva	T.	.....	Elkins	T.	0.0
Big Rapids	6	.....	Ithaca	2	.....	Romey	T.	.....
Calumet	9	.....	Lake Placid	12	.....	Weston	T.	.....
Chatham	10	.....	Lowville	10	.....	Wisconsin.	.....	.....
Detroit	T.	1.0	New York	T.	.....	Ashland	4	.....
Escanaba	6	3.0	Oswegatchie	18	.....	East Cleire	5	.....
Grand Haven	T.	0.0	Oswego	2	0.0	Green Bay	5	6.0
Grand Rapids	1	.....	Plattsburgh	3	.....	Koepenick	12	.....
Houghton	10	7.5	Rochester	T.	0.0	La Crosse	3	9.5
Humboldt	8	.....	Saranac Lake	12	.....	Lake Mills	2	.....
Iron River	14	.....	Saratoga	4	.....	Madison	1	.....
Lansing	2	.....	Setauket	T.	.....	Mount Horeb	1	.....
Mackinaw City	8	.....	Southampton	T.	.....	New London	12	.....
Maneolona	24	.....	Syracuse	T.	.....	Portage	5	.....
Manistee	4	.....	Watertown	4	.....	Viroqua	4	.....
Maple Ridge	12	.....	Wedgewood	4	.....	Wausau	6	.....
Marquette	11	0.0	North Dakota.	.....	.....	Wyoming.	.....	.....
Newberry	9	.....	Bismarck	2	11.5	Cheyenne	T.	.....
Port Huron	3	0.5	Devil's Lake	4	.....	Lander	3	.....
Sault Ste. Marie	9	0.0	Williston	5.0	.....	Sheridan	3	.....
St. Ignace	3	.....	Ohio.	.....	Yellowstone Park	6	.....
Minnesota.	.....	.....	Garrettsville	T.	.....	.....	.....	.....
Bird Island	6	.....	Oregon.	.....	.....	.....	.....	.....
			Baker City	T.	.....	.....	.....	.....

* Floating ice.

† Shore ice.

T. indicates trace.

U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.

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JAN 7 1909
U. S. DEPT. OF AGRICULTURE



WASHINGTON, D. C., January 5, 1908.

EST. II OF SNOW.

The storm that moved eastward along the northern border from the north Pacific coast to New England from December 28 to 31, brought light snows to the more northern districts only, and with the moderate weather prevailing during the first part of the week the stock of snow has generally decreased over all districts, except in portions of northern New England, at points in the upper Lake region and over the upper Missouri Valley, where there has been a slight increase.

Over interior New England and northern New York and at points in the mountains of Pennsylvania the depth of snow now ranges from 3 to 9 inches, with from 12 to 18 inches in the Adirondack Mountains. Over northern Michigan and from Wisconsin westward to eastern North Dakota the depth ranges from 3 to 12 inches, and at the lower elevations of the Rocky Mountain regions the depth ranges from 3 to 8 inches.

Over the Ohio Valley and lower Lake region, the middle Mississippi and lower Missouri valleys, and Great Plains districts the ground was generally bare of snow at 8 p.m. of the 4th. At this writing however snow is falling in the northern Rocky Mountain region, in the upper Missouri Valley, and at points in the upper Lakes, with indications of its extension eastward over the lower Lakes and New England.

There has been a general decrease during the week of from 1 inch to 3 inches of snow over the Appalachian Mountain region from Virginia northward, and from 3 to 6 inches over central Michigan and the southern and central portions of Wisconsin and Minnesota, and at points in South Dakota and Utah.

ICE IN RIVERS, HARBORS, ETC.

The absence of any decided cold weather over the eastern portions of the country prevented any rapid increase in ice formation, and the conditions this week over New England and the Middle Atlantic States are very similar to those reported one week ago. In the interior districts of Maine and the northern portion of the Connecticut River the ice ranges from 11 to 15 inches in thickness, and cutting has begun.

In the Middle Atlantic States and Ohio Valley practically no ice has yet formed, except in the upper portion of the Hudson and its tributaries. In the lower Lake region considerable ice formed in some of the protected harbors, and there is now more ice than was reported last week.

The prevalence of a moderate cold wave over the upper Lakes and upper Mississippi and Missouri valleys during the last few days of the year caused a considerable increase in the amount of ice in the rivers and harbors of those districts. In the upper Mississippi the maximum thickness reported is 12.5 inches at La Crosse, Wis., with floating ice as far south as Hannibal, Mo. In the Missouri River the maximum thickness is 13 inches at Bismarck, N. Dak. In the Red River of the North the increase in thickness at Moorhead, Minn., has been 6 inches, and there is now 18 inches of ice in the river. In the upper Lakes there has been a uniform increase of from 1 inch to 4 inches, with a maximum thickness of 14 inches at Duluth, Minn.

The following special reports have been received:

Gardiner, Me., January 4.—The snow in the Kennebec Valley is very even in depth and favorable for lumbering operations. The ice crop is gaining slowly owing to mild weather.

Brattleboro, Vt., January 4.—Cutting of ice on the Connecticut River has begun. *Hartford, Conn., January 4.*—The depth of snow in the Connecticut Valley ranges from 3 inches in central Massachusetts to a foot at the headwaters. Navigation of the lower river closed on the 31st. The ice on the upper portion has attained a thickness of 10 inches. In the upper Housatonic Valley the snow is 2 inches deep.

Albany, N. Y., January 5.—In the Hudson Valley the depth of snow ranges from 4 inches at Little Falls. The ice in the Hudson River averages 4 inches in thickness; in the Mohawk River it averages 7 inches.

Binghamton, N. Y., January 5.—The average depth of snow on each watershed is about 2½ inches, the least being a trace at Binghamton and Oneonta, the greatest, 5 inches at Starucca, Pa.

Pittsburg, Pa., January 4.—The watersheds are practically free from snow, about 1 inch remaining over Elk County and traces over Westmoreland.

Hannibal, Mo., January 4.—There is a little floating ice in the Mississippi River.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., JANUARY 4, 1908.

Stations.	Snow. Inches	Ice in rivers, har- bors, etc.	Stations.	Snow. Inches	Ice in rivers, har- bors, etc.	Stations.	Snow. Inches	Ice in rivers, har- bors, etc.
<i>Arizona.</i>			<i>Michigan—Cont'd.</i>	<i>Inches</i>	<i>Inches</i>	<i>North Dakota.</i>	<i>Inches</i>	<i>Inches</i>
Flagstaff.....	1	.....	Saginaw.....	T.	.....	Bismarck.....	2	13.0
<i>Colorado.</i>			Sault Ste. Marie.....	7	1.0	Devils Lake.....	6	.....
Durango.....	T.	.....	St. Ignace.....	6	.....	Williston.....	T.	7.0
Grand Junction.....	2	.....	Woodlawn.....	7	.....	<i>Ohio.</i>		
Leadville.....	8	.....	<i>Minnesota.</i>			Sandusky.....		1.5
<i>Connecticut.</i>			Alexandria.....	4	.....	<i>Pennsylvania.</i>		
Hartford.....	*	.....	Bird Island.....	3	.....	Altoona.....	T.	.....
West Simsbury.....	T.	.....	Collegeville.....	2	.....	East Mauch Chunk.....	1	.....
<i>Idaho.</i>			Duluth.....	2	14.0	Gordon.....	5	.....
Wallace.....	1	.....	Faribault.....	3	.....	Mifflintown.....	T.	.....
<i>Illinois.</i>			Farmington.....	3	.....	Monroe.....	6	.....
Peoria.....	*	.....	Fort Ripley.....	3	.....	St. Marys.....	1	.....
<i>Iowa.</i>			Grand Meadow.....	5	.....	Selins Grove.....	2	.....
Davenport.....	*	.....	Mankato.....	2	.....	Towanda.....	1	.....
Des Moines.....	4.0	.....	Milan.....	3	.....	<i>South Dakota.</i>		
Dubuque.....	†	.....	Minneapolis.....	4	.....	Huron.....	1	15.5
Keokuk.....	4.0	.....	Moorehead.....	8	18.0	Pierre.....	T.	12.0
Sioux City.....	4.0	.....	Reeds.....	3	.....	Rapid City.....	T.	.....
<i>Maine.</i>			St. Paul.....	3	10.0	Yankton.....		4.0
Bangor.....	5	10.0	Worthington.....	1	.....	<i>Utah.</i>		
Buckfield.....	9	.....	<i>Montana.</i>			Modena.....	T.	.....
Cornish.....	11	.....	Havre.....	2	.....	Salt Lake City.....	T.	.....
Danforth.....	6	.....	Helena.....	3	.....	<i>Vermont.</i>		
Eastport.....	T.	12.0	Miles City.....	T.	.....	Brattleboro.....	3	11.0
Gardiner.....	6	8.0	<i>New Hampshire.</i>			Burlington.....	1	0.0
Greenville.....	9	14.5	Bethlehem.....	10	.....	Northfield.....	7	.....
Lewiston.....	8	11.5	Concord.....	4	3.5	<i>Virginia.</i>		
Orono.....	5	.....	Durham.....	2	.....	Fredericksburg.....	T.	.....
Portland.....	1	0.0	Keene.....	3	.....	Lynchburg.....	T.	0.0
<i>Maryland.</i>			<i>New Jersey.</i>			Woodstock.....	T.	.....
Easton.....	1	.....	Tuckerton.....	T.	.....	<i>Washington.</i>		
<i>Massachusetts.</i>			<i>New Mexico.</i>			Spokane.....	T.	.....
Amherst.....	T.	.....	Santa Fe.....	T.	.....	Tacoma.....	T.	.....
Concord.....	T.	.....	<i>New York.</i>			<i>Wisconsin.</i>		
North Adams.....	4	.....	Addison.....	1	.....	Ashland.....	3	.....
<i>Michigan.</i>			Alpena.....	T.	1.0	Grand Rapids.....	7	.....
Big Rapids.....	3	4.0	Beaver River.....	18	.....	Green Bay.....	2	6.0
Calumet.....	2	.....	Binghamton.....	T.	.....	Koepenick.....	10	.....
Chatham.....	11	.....	Buffalo.....	T.	†	La Crosse.....	T.	12.5
Detroit.....	7	.....	Canton.....	T.	.....	Madison.....	T.	.....
Escanaba.....	0.5	.....	Cooperstown.....	3	.....	Medford.....	6	.....
Grand Rapids.....	3	5.0	De Ruyter.....	3	.....	New London.....	6	.....
Houghton.....	12	8.5	Franklinville.....	2	.....	Portage.....	3	.....
Humboldt.....	8	.....	Herkimer.....	3	.....	Sheboygan.....	T.	.....
Iron Mountain.....	2	.....	Keuka Park.....	T.	.....	Spooner.....	2	.....
Ironwood.....	14	.....	Lake Placid.....	12	.....	Viroqua.....	2	.....
Mackinaw City.....	5	.....	Malone.....	4	.....	Wausau.....	4	.....
Mancelona.....	21	.....	Oswego.....	1.0	.....	<i>Wyoming.</i>		
Manistee.....	1	.....	Plattsburgh.....	3	.....	Lander.....	2	.....
Marquette.....	9	2.5	Port Jervis.....	2	.....	Sheridan.....	2	.....
Port Huron.....	T.	8.0	Rome.....	4	Yellowstone Park.....	7

* Floating ice. † Shore ice.

T. indicates trace.

Jan 109

SNOW AND ICE BULLETIN.

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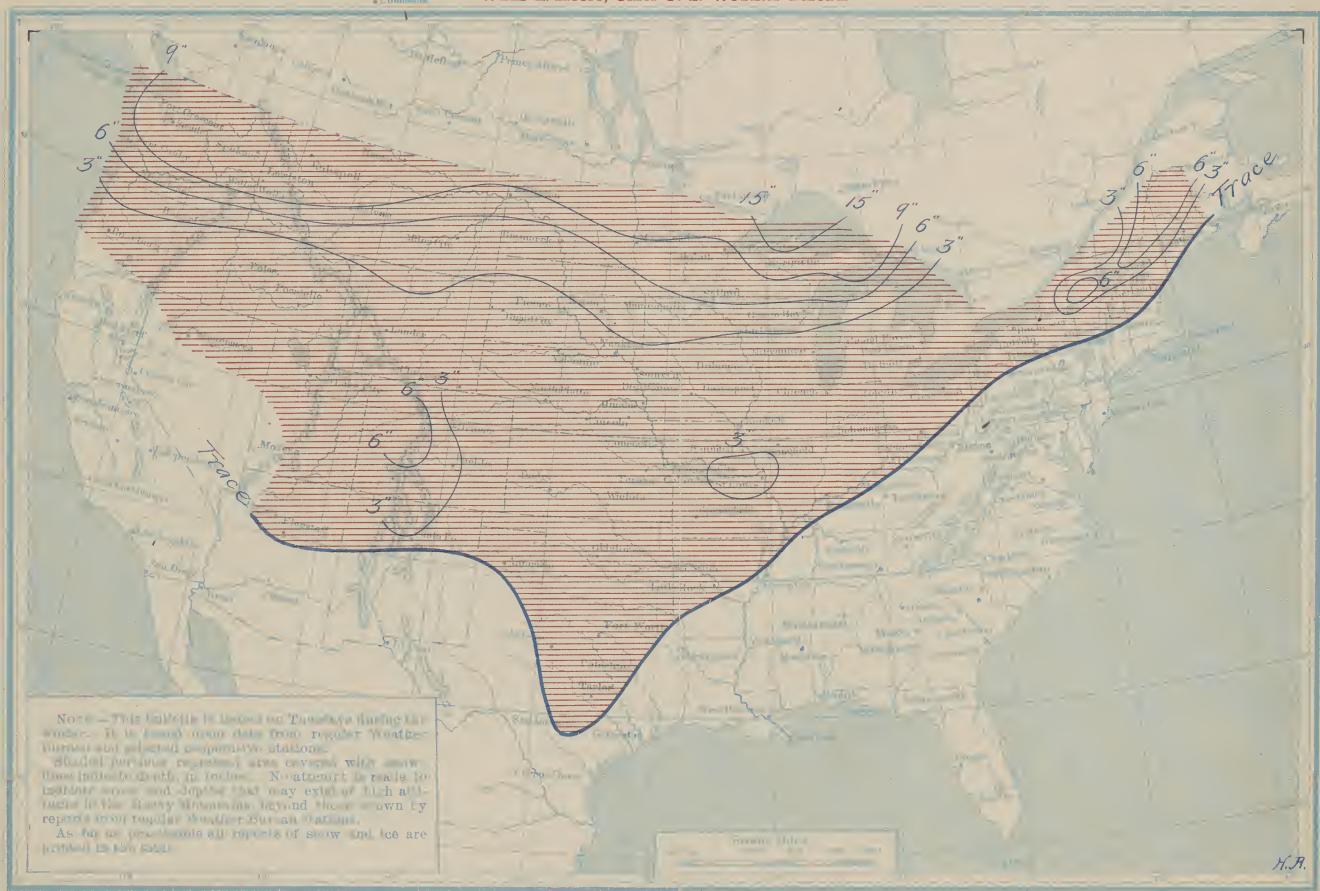
Willis L. Moore, Chief U. S. Weather Bureau.

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JAN 17 1909

U. S. Dept of Agriculture



WASHINGTON, D. C., January 12, 1909.

DEPTH OF SNOW.

During the week ending 8 p.m., January 11, unusually heavy snows occurred in the northern Rocky Mountain district and thence westward to the Pacific, where at the lower elevations the ground was covered to depths ranging from 3 to 13 inches with much heavier falls at the higher elevations. Considerable snow also fell in the mountain districts of Colorado and the adjacent portions of Wyoming, Utah, and New Mexico, the depths now ranging from 3 to 18 inches. Over the upper Missouri Valley and thence eastward to the upper Lake region the fall during the week ranged from 2 to 8 inches and the accumulated depth now ranges from 3 to 15 inches.

Small amounts of snow occurred over a large extent of territory from the central Rocky Mountain slope eastward to the Ohio Valley and southward to central Texas. Over the Middle Atlantic and New England States there has been but little snow during the week, and much of that reported on the ground one week ago has disappeared.

Compared with the preceding week, there has been a large increase in the area covered with snow and a decided increase in depth over the region from the upper Lakes westward to the Pacific.

During Monday night there appears to have been a fall of several inches in the Ohio Valley, and at this writing snow is falling from the upper Ohio Valley and lower Lake region northeastward to New England, with indications of heavy falls in the latter district and in the mountain portions of New York and Pennsylvania.

ICE IN RIVERS, HARBORS, ETC.

Since the issue of last week cold weather has generally predominated over the districts between the Appalachian and Rocky Mountains, and under its influence the stock of ice in the northern portions of the streams and rivers of that district has materially increased. Over New England, however, the weather has continued moderate and considerable ice has disappeared from the southern portion, while over the interior and northern districts the increase in depth has been but slight.

In the main streams of the Middle Atlantic States and Ohio Valley no ice has yet formed to any extent.

In New England the maximum thickness of ice reported is 18 inches at Greenville, Me., with practically none in the Connecticut River.

In the upper portions of the Mississippi and Missouri rivers and their tributaries the ice ranges from 8 to 20 inches in thickness, with floating ice in the Mississippi River as far south as Cairo, Ill. In Lake Superior the ice in the harbors ranges from 18 inches at Duluth to 5 inches at the Soo, and in the protected parts of the western shore of Lake Michigan there is also considerable ice.

The following special reports have been received:

Gardiner, Me., January 11.—The January thaw has put a stop to all lumbering operations. The ice crop is growing very slowly; lemen are somewhat discouraged.

Burlington, Vt., January 11.—The Connecticut River is open. Some snow remains back on the hills.

Hartford, Conn., January 11.—There is a depth of 6 inches of snow in the upper Connecticut Valley, but the ground is bare below the northern boundary of Massachusetts. The river is free of ice from Holyoke to Long Island Sound.

Albany, N. Y., January 12.—In the Hudson Valley the depth of snow ranges from 2 inches at Glens Falls to 4 inches at Thurman; in the Mohawk River from 1 inch at Tribes Hill to 2 inches at Little Falls. The ice in the Hudson River averages 4 inches in thickness, but the river is open in many places; the Mohawk River is mostly open below Little Falls.

Hannibal, Mo., January 11.—The ice in the Mississippi River is gorged just above the town, and again 3 miles below, but the channel is still open here.

St. Louis, Mo., January 11.—The Mississippi River here is full of heavy moving ice.

Cairo, Ill., January 11.—There is considerable floating ice to-night in the Mississippi River back of Cairo.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., JANUARY 11, 1909.

Stations.	Snow. Inches in rivers, har- bors, etc.	Stations.	Snow. Inches in rivers, har- bors, etc.	Stations.	Snow. Inches in rivers, har- bors, etc.
Arizona.	Flagstaff.....	Michigan—Cont'd.	Grand Rapids.....	New York—Cont'd.	Inches.....
Arkansas.	T. 7.....	Houghton.....	T. 19.....	Rochester.....	0.0
Bentonville.....	2.....	Ironwood.....	10.0	Rome.....	2.....
Fort Smith.....	T. 0.0	Mackinaw City.....	8.....	Syracuse.....	T.
Little Rock.....	2.....	Mancelona.....	22.....	North Dakota.	4.....
Colorado.	Denver.....	Manistee.....	6.....	Bismarck.....	17.0
Durango.....	2.....	Marquette.....	11.....	Devils Lake.....	9.....
Grand Junction.....	T. 18.....	Newberry.....	8.....	Williston.....	12.0
Leadville.....	3.....	Port Huron.....	7.0.....	Bangorville.....	1.....
Pueblo.....	Idaho.	Sault Ste. Marie.....	5.0.....	Cadiz.....	1.....
Boise.....	1.....	Woodlawn.....	8.....	Cincinnati.....	0.0
Lewiston.....	10 0.0	Minnesota.	4.....	Cleveland.....	2.....
Illinois.	Bloomington.....	Bird Island.....	4.....	Columbus.....	1 0.0
Cairo.....	1 *.....	Collegeville.....	4.....	Sandusky.....	3.5
Chicago.....	T. 3.5.....	Crookston.....	10.....	Toledo.....	2.0
Hillsboro.....	T. 3.5.....	Detroit.....	8.....	Oklahoma.	1.....
La Salle.....	T. 3.5.....	Duluth.....	18.0.....	Oklahoma.	1.....
Monmouth.....	T. 3.5.....	Faribault.....	4.....	Oregon.	3.....
Olney.....	T. 4.5.....	Farmington.....	5.....	Baker City.....	2.....
Peoria.....	1.....	Far Ripley.....	6.....	Portland.....	8.....
Springfield.....	3.....	Grand Meadow.....	7.....	Roseburg.....	2.....
White Hall.....	T. 0.0.....	Hinckley.....	4.....	Pennsylvania.	1.....
Indiana.	Evansville.....	Mankato.....	5.....	Erie.....	1.0
Indianapolis.....	3.....	Minneapolis.....	10.....	Warren.....	2.....
Jeffersonville.....	T. 0.0.....	Moorhead.....	19.0.....	South Dakota.	21.0
La Fayette.....	T. 2.....	Reeds.....	4.....	Pierre.....	19.0
Marion.....	T. 2.....	St. Paul.....	6.....	Rapid City.....	1.....
Paoli.....	T. 2.....	Worthington.....	3.....	Yankton.....	14.0
Iowa.	Atlantic.....	Missouri.	3.....	Tennessee.	0.0
Boone.....	2.....	Columbia.....	5.5.....	Memphis.....	T.
Charles City.....	1.....	Clinton.....	1.....	Texas.	Abilene.....
Davenport.....	1.....	Hamlin.....	7.0.....	Amarillo.....	1.....
Des Moines.....	1.....	Kansas City.....	1.....	Fort Worth.....	T.
Dubuque.....	1.....	Maryville.....	5.....	Palestine.....	T.
Keokuk.....	1.....	Pacific.....	7.....	San Antonio.....	T.
Marshalltown.....	T. 8.0.....	St. Louis.....	7.....	Taylor.....	T.
Sioux City.....	1.....	Springfield.....	7.....	Utah.	Salt Lake City.....
Waterloo.....	T. 8.0.....	Montana.	11.....	Vermont.	Burlington.....
Kansas.	Concordia.....	Helena.....	13.....	Northfield.....	0.0
Dodge City.....	1.....	Kalispell.....	10.....	St. Johnsbury.....	2.....
Horton.....	1.....	Miles City.....	3.....	Virginia.	Dale Enterprise.....
Iola.....	3.5.....	Nebraska.	1.....	Woodstock.....	T.
McPherson.....	2.....	Columbus.....	1.....	Washington.	North Head.....
Topeka.....	3.....	Imperial.....	1.....	Port Crescent.....	9.....
Wichita.....	1.....	Lincoln.....	2.....	Seattle.....	7.....
Kentucky.	Louisville.....	Norfolk.....	2.....	Spokane.....	9.....
St. John.....	T. 0.0.....	North Platte.....	2.....	Tacoma.....	12.....
Maine.	Bangor.....	Omaha.....	8.0.....	Tatooch Island.....	2.....
Buckfield.....	5.....	St. Paul.....	1.....	Walla Walla.....	13.....
Danforth.....	T. 12.0.....	Valentine.....	2.....	West Virginia.	Fairmont.....
Eastport.....	T. 9.0.....	York.....	1.....	Wisconsin.	Eau Claire.....
Gardiner.....	T. 18.0.....	Reno.....	1.....	Green Bay.....	12.0
Greenville.....	T. 12.0.....	Winnebago.....	1.....	Koepenick.....	17.0
Lewiston.....	T. 8.0.....	New Hampshire.	1.....	La Crosse.....	2.....
Millinocket.....	8.....	Bethlehem.....	1.....	Madison.....	Medford.....
Maryland.	Baltimore.....	Concord.....	3.5.....	Portage.....	3.....
Massachusetts.	North Adams.....	Durham.....	T.	Racine.....	T.
Michigan.	Alpena.....	Keene.....	T.	Sheboygan.....	T.
Alpena.....	3 0.0.....	New Mexico.	T.	Spooner.....	4.....
Battle Creek.....	T. 1.....	Franklinville.....	T.	Waupaca.....	8.....
Big Rapids.....	1.....	Herkimer.....	T.	Wausau.....	7.....
Calumet.....	18.....	Ithaca.....	T.	Wyoming.	Cheyenne.....
Chatham.....	10.....	Keuka Park.....	T.	Lander.....	1.....
Detroit.....	5.0.....	Le Roy.....	T.	Sheridan.....	5.....
Escanaba.....	13.0.....	Lowville.....	4.....		
Grand Haven.....	2 0.0.....	Malone.....	T.		
		Oswego.....	4.0.....		

* Floating ice.

T. indicates trace.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., January 26, 1909.

DEPTH OF SNOW.

During the week ending 8 p. m., January 25, but little snow occurred in any portion of the United States, except locally in New England and at a few points in the mountain regions of the West; and under the influence of the generally warm weather that prevailed a large part of the snow reported on the ground at 8 p. m. of the 18th has disappeared.

Appreciable amounts of snow are now confined mainly to New England, the northern and interior portions of New York and Pennsylvania, the Upper Michigan Peninsula, portions of Wisconsin, Minnesota, and the Dakotas, and to the higher elevations of the Rocky Mountain regions.

In New England and interior New York the depth ranges from 3 to 20 inches; in portions of the upper Lake region and upper Mississippi Valley, from 3 to 15 inches; and in the Rocky Mountain districts amounts as high as 26 inches were reported, with doubtless greater depths at higher elevations.

From 2 to 4 inches of snow fell during the week in portions of Maine, and in the high mountains of northern Colorado and northern Arizona there were local falls of from 4 to 10 inches.

During the week from 2 to 8 inches of snow disappeared over the middle Atlantic States, Lake region, and in the upper Mississippi and Missouri valleys, and the ground is now bare or nearly so over large portions of those districts.

Considerable snow has also disappeared from the northern portions of the Rocky Mountain and Plateau districts, and only a slight covering remains at the lower levels.

ICE IN RIVERS, HARBORS, ETC.

With comparatively mild weather prevailing over nearly all districts since the 18th, there has been a general decrease in the thickness of ice in all streams, rivers, and lakes, except at a few points in New England, along the southern and western shores of Lake Superior, and at points in Minnesota and North Dakota.

Ice has practically disappeared from the lower portions of the Hudson and Mohawk rivers, and that which had formed during the preceding week in the smaller streams of the Middle Atlantic States and Ohio Valley has generally disappeared.

In the lower portions of the Mississippi and Missouri rivers the ice has diminished in thickness from 2 to 8 inches, and from 4 to 10 inches has disappeared from the harbors of the lower Lakes and the southern portions of the upper Lakes.

The lower Lakes are now practically free of ice and but little is reported from Lakes Michigan and Huron.

Over New England there has been a slight increase at points in the interior, the thickness now ranging from 8 to 21 inches, and small quantities have been harvested in those districts.

In the upper portions of the Mississippi and Missouri River valleys and along the southern shore of Lake Superior the ice conditions have not materially changed since last week, the maximum thicknesses being 23.5 inches at Bismarck, 23 at Moorhead, 20 at Duluth, and 18 at St. Paul.

The following special reports have been received:

Gardiner, Me., January 25.—A small quantity of ice has been harvested in Maine the past week.

Hartford, Conn., January 26.—The snow covering in the Housatonic and Connecticut valleys varies in depth from a trace in this State to 6 inches in the upper Housatonic Valley and a foot in the upper Connecticut. The thickness of ice remains practically unchanged.

Albany, N. Y., January 26.—In the Hudson Valley the depth of snow ranges from 2 inches at Athens to 7 at Corinth. The ice has gone out of the Mohawk, and the Hudson River is open from the mouth of the Mohawk to above Castleton.

Hannibal, Mo., January 25.—There is a little floating ice in the Mississippi River here.

Sioux City, Iowa, January 25.—There is much open water in the Missouri River here, the ice in some places is 10 inches thick.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., JANUARY 25, 1909.

Stations.	Snow.	Ice in rivers, har- bors etc.	Stations.	Snow.	Ice in rivers, har- bors etc.	Stations.	Snow.	Ice in rivers, har- bors etc.
Arizona.	Inches	Inches	Minnesota—Cont'd.	Inches	Inches	North Dakota—Con	Inches	Inches
Flagstaff.....	4	.....	Bird Island.....	2	.....	Williston.....	1	?
Colorado.	.....	.....	Collegeville.....	2	.....	Oregon.....	T.	.....
Durango.....	1	.....	Crookston.....	10	.....	Baker City.....	T.	.....
Leadville.....	26	.....	Detroit.....	8	.....	Pennsylvania.	.....	.....
Connecticut.	.....	.....	Duluth.....	1	20.0	East Mauch Chunk	3	.....
Hartford.....	T.	†	Farmington.....	3	.....	Ephrata.....	T.	.....
West Cornwall.....	T.	.....	Fort Ripley.....	4	.....	Gettysburg.....	1	.....
West Simsbury.....	1	.....	Grand Meadow.....	T.	.....	Harrisburg.....	T.	0.0
Iowa.	.....	.....	Mankato.....	1	.....	Mifflintown.....	2	.....
Des Moines.....	8.0	.....	Milan.....	2	.....	Williamsport.....	4	.....
Dubuque.....	7.0	.....	Minneapolis.....	11	23.0	Rhode Island.	.....	.....
Keokuk.....	2.0	.....	Moorhead.....	11	23.0	Narragansett.....	T.	.....
Sioux City.....	10.0	.....	St. Paul.....	18.0	.....	Providence.....	T.	0.0
Maine.	.....	.....	Worthington.....	2	.....	South Dakota.	.....	.....
Bangor.....	10	12.5	Missouri.	.....	.....	Huron.....	3	21.0
Buckfield.....	13	.....	Hannibal.....	.....	.....	Pierre.....	T.	20.0
Cornish.....	8	.....	Kansas City.....	.....	.....	Yankton.....	.....	15.0
Danforth.....	14	.....	Montana.	.....	.....	Utah.	.....	.....
Eastport.....	4	13.5	Helena.....	1	.....	Modena.....	T.	.....
Gardiner.....	13	13.0	Kalispell.....	T.	.....	Salt Lake City.....	1	.....
Greenville.....	16	21.0	Miles City.....	2	.....	Vermont.	.....	.....
Lewiston.....	16	14.0	Nebraska.	.....	.....	Brattleboro.....	7	8.0
Millinocket.....	23	.....	Omaha.....	9.0	.....	Burlington.....	T.	0.0
Orono.....	13	.....	Nevada.	.....	.....	Northfield.....	6	.....
Portland.....	7	0.0	Topnacah.....	2	.....	St. Johnsbury.....	12	.....
Massachusetts.	.....	.....	New Hampshire.	.....	.....	Virginia.	.....	.....
Adams.....	6	.....	Bethlehem.....	6	.....	Dale Enterprise.....	T.	.....
Amherst.....	3	.....	Concord.....	5	15.0	Woodstock.....	T.	.....
Boston.....	T.	.....	Keene.....	5	.....	Washington.	.....	.....
Concord.....	3	.....	New Jersey.	.....	.....	Port Crescent.....	1	.....
Fitchburg.....	3	.....	Belvidere.....	1	.....	Spokane.....	2	.....
Mansfield.....	T.	.....	Flemington.....	T.	.....	Tatooch Island.....	T.	.....
North Adams.....	4	.....	Newark.....	T.	.....	Wisconsin.	.....	.....
Michigan.	.....	.....	New York.	.....	.....	Eau Claire.....	T.	.....
Alpena.....	T.	0.0	Addison.....	T.	.....	Green Bay.....	.....	6.0
Calumet.....	15	.....	Albany.....	2	0.0	Koepenick.....	2	.....
Chatham.....	2	.....	Beaver River.....	12	.....	La Crosse.....	.....	16.0
Escanaba.....	T.	16.0	Binghamton.....	T.	.....	Medford.....	T.	.....
Houghton.....	11	11.5	Buffalo.....	.....	†	Mount Horeb.....	T.	.....
Humboldt.....	5	.....	Canton.....	T.	.....	New London.....	T.	.....
Ironwood.....	5	.....	De Ruyter.....	T.	.....	Spooner.....	T.	.....
Maple Ridge.....	2	.....	Herkimer.....	3	.....	Viroqua.....	T.	.....
Marquette.....	2	0.0	Melrose.....	2	.....	Waupaca.....	1	.....
Newberry.....	2	.....	Oswego.....	5.5	.....	Wyoming.	.....	.....
Sault Ste. Marie.....	4	9.0	Setauket.....	T.	.....	Cheyenne.....	1	.....
St. Ignace.....	4	.....	North Dakota.	.....	.....	Sheridan.....	T.	.....
Woodlawn.....	4	.....	Bismarck.....	T.	23.5	Yellowstone Park	13	.....
Minnesota.	.....	.....	Devils Lake.....	2	.....	.....	.....	.....
Alexandria.....	6	.....	.....	.....	.....	.....	.....	.....

* Floating ice.

† Ice gorged.

‡ Slush ice.

T. indicates trace.

Feb. 109

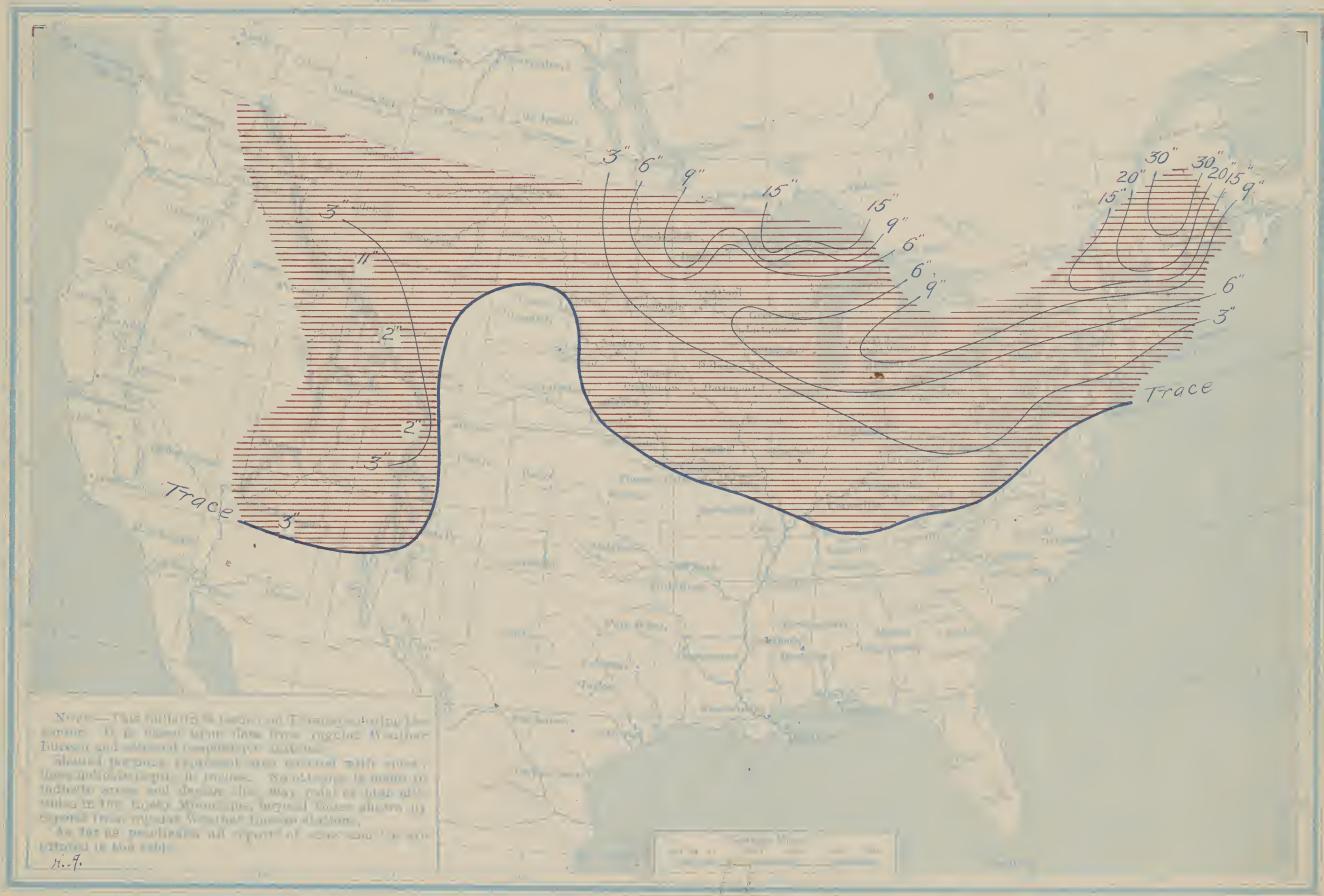
SNOW AND ICE BULLETIN.

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Willis L. Moore, Chief U. S. Weather Bureau.

U. S. DEPARTMENT OF AGRICULTURE

WEATHER BUREAU



WASHINGTON, D. C., February 2, 1909.

DEPTH OF SNOW.

The moderate weather noted in the issue of the Bulletin of last week continued till about the 28th, when a severe storm developed over the central west and moved eastward over the Lake region and New England during the 29th and 30th. Comparatively heavy snows occurred in portions of the Mississippi and Ohio valleys, Lake region, western and northern New York, and over most of New England. A decided fall in temperature occurred in connection with the progress of the above storm eastward, freezing weather extending to the Gulf coast and central Florida. In the northern districts, however, the snow preceded the cold, and the ground was generally covered in those districts.

Over the greater part of New York and New England the snow now ranges from 10 to 30 inches in depth, and in the Lake region and upper Mississippi Valley the depth varies from 6 to 15 inches. In the Middle Atlantic States, Ohio and middle Mississippi valleys the depths range from 1 inch to 5 inches.

Over the Missouri Valley only traces of snow are reported as a rule, and on the Great Plains the ground is mostly bare, and but small amounts are reported from the lower elevations of the Rocky Mountain and Plateau districts. Reports indicate, however, that considerable snow has fallen in the higher elevations of the Rocky Mountains from Colorado northward, and there were heavy falls in the high elevations of the Sierra, 170 inches being reported as the depth unmelted at Summit, Cal.

ICE IN RIVERS, HARBORS, ETC.

The cold wave that overspread the districts from the Rocky Mountains eastward during the latter part of the week caused the formation of considerable new ice over the lower Lake region and in the smaller streams of the Ohio Valley and the Middle Atlantic States, and added materially to that already formed in other northern districts.

In the rivers of New England ice from 12 to 20 inches in thickness is now being harvested, the operations have been seriously delayed by heavy snow and inclement weather.

In the harbors of the lower Lakes from 2 to 5 inches of new ice has formed during the last few days. In the main streams of the Middle Atlantic States, except in the Hudson and its tributaries, but little ice has yet formed, and the Ohio River is still clear of ice from Pittsburgh to its mouth. The ice in the upper Mississippi and Missouri rivers and their tributaries has gradually increased in thickness, and in the Mississippi it now ranges from 5 inches at Keokuk to 18.5 at St. Paul, and in the Missouri River from 8 inches at Omaha to 26.5 inches at Williston.

The following special reports have been received:

Gardiner, Me., February 1.—The heavy snow and stormy weather during the past week have delayed all lumbering and ice operations.

Hartford, Conn., February 2.—During the past week the depth of snow has materially increased. It now ranges from 4 inches in this State to 10 in the upper Housatonic Valley and 20 in the upper Connecticut Valley. The ice has become much heavier and is being harvested.

Albany, N. Y., February 2.—In the Hudson Valley the depth of snow averages 5 inches; in the Mohawk, 8 inches. The ice in the Hudson River averages 10 inches in thickness; in the Mohawk, 7 inches.

Binghamton, N. Y., February 2.—The average depth of snow on the ground in this river district is 5 inches.

Pittsburg, Pa., February 1.—Over the watersheds of the Allegheny and Monongahela rivers the snow averages from 2 to 6 inches in depth, the smaller amount being over the lower portions, near Pittsburg.

Hanibal, Mo., February 2.—The ice in the Mississippi River is gorged at Quincy, Ill.; otherwise the channel hereabouts remains open, tho there is much shore ice.

Cairo, Ill., February 1.—There is considerable heavy floating ice passing down the Mississippi River back of Cairo.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., FEBRUARY 1, 1909.

Stations.	Snow. Inches	Ice in rivers, har- bors etc.	Stations.	Snow. Inches	Ice in rivers, har- bors etc.	Stations.	Snow. Inches	Ice in rivers, har- bors etc.
Arizona.			Michigan—Cont'd.			Ohio—Cont'd.		
Flagstaff.	3		Mackinaw City.	4		Cincinnati.	0.0	
Colorado.			Mancelona.	4		Cleveland.	1	1.5
Leadville.	22		Manistee.	6		Columbus.	4	4.0
Connecticut.			Maple Ridge.	8		Dayton.	4	
Hartford.	4	2.0	Marquette.	4	2.0	Kenton.	3	
New Haven.	5		Port Huron.	10	5.0	Philo.	5	
West Cornwall.	6		Saginaw.	12		Sandusky.	6	4.0
West Simsbury.	4		Sault Ste. Marie.	4	12.0	Tiffin.	5	
Illinois.		*	St. Ignace.	3		Toledo.	3	2.0
Cairo.			South Haven.	5		Wauseon.		
Chicago.	4		Minnesota.			Waverly.	3	
La Salle.	T.	3.0	Alexandria.	9		Pennsylvania.		
Monmouth.	2		Bird Island.	5		Baldwin.	4	
New Burnside.	2		Collegeville.	5		East Mauch Chunk.	4	
Peoria.	T.	3.0	Crookston.	4		Ephrata.	1	
Springfield.	1.		Duluth.	1	21.0	Erie.	3	1.0
White Hall.	2		Faribault.	5		Gettysburg.	1	
Winnebago.	2		Farmington.	4		Harrisburg.	1	0.0
Bloomington.	3		Fort Ripley.	10		Philadelphia.	T.	0.5
Evansville.	1	0.0	Hinkley.	3		Pittsburg.	2	0.0
Indianapolis.	T.		Mankato.	5		St. Marys.	3	
Knox.	18		Milan.	5		Soraton.	1	
Marion.	4		Minneapolis.	4		Selins Grove.	4	
Paoli.	2		Moorhead.	8	24.0	Warren.	2	
Princeton.	3		Reeds.	4		Rhode Island.		
Rockville.	1		St. Paul.	3	18.5	Block Island.	1	2.5
Iowa.			Missouri.			Kingston.	4	
Albia.	1		Hannibal.	2	†	Narragansett.	2	
Atlantic.	2		Kansas City.	T.	*	South Dakota.	1	0.0
Davenport.	1	2.0	St. Louis.	T.	*	Huron.	T.	23
Des Moines.	2	9.5	Montana.	T.		Pierre.		21.0
Dubuque.	4	11.0	Helena.	T.		Yankton.	2	7.0
Iowa City.	1		Miles City.	T.		Tennessee.		
Keokuk.	T.	5.0	Nebraska.			Nashville.	T.	0.0
Marshalltown.	1		Norfolk.	4		Vermont.		
Sioux City.	T.	13.0	Omaha.	1	8.0	Brattleboro.	5	13.0
Kansas.			New Hampshire.	24		Burlington.	4	3.5
Iola.		1.0	Bethlehem.	10	16.0	Northfield.	9	
Kentucky.			Concord.	5		St. Johnsbury.	22	
Catlettsburg.	1		Keene.			Virginia.		
Eubank.			New Jersey.			Fredericksburg.	T.	
Louisville.	1	0.0	Asbury Park.	2		Lynchburg.	T.	0.5
Maine.			Beldierville.	2		Mount Weather.	T.	
Bangor.	13	12.0	Cape May.	1.0		Richmond.	T.	0.5
Buckfield.	27		Charlotteburg.	3		Wytheville.	T.	
Cornish.	18		Flemington.	2		Washington.		
Danforth.	19		Hightstown.	5		Spokane.	T.	
Eastport.	6	14.0	Tuckerton.	1		West Virginia.		
Gardiner.	22	14.0	New York.			Charleston.	1	
Greenville.	22	21.0	Albany.	3	4.0	Elkins.	2	3.5
Lawson.	26	17.0	Binghamton.	9	3.0	Grafton.	5	
Millinocket.	33		Buffalo.	9		New Martinsville.	5	
Orono.	17		Canton.	9		Parkersburg.	3	0.0
Portland.	22	0.0	Cooperstown.	4		Weston.	3	
Maryland.			Cutchogue.	3		Wisconsin.		
Oakland.	6		De Ruyter.	7		Ashland.	3	
Massachusetts.			Franklinville.	6		Eau Claire.	5	
Boston.	3		Herkimer.	3		Grand Rapids.	3	
Concord.	6		Ithaca.	5		Green Bay.	2	8.0
Michigan.			Keuka Park.	7		Koepenick.	4	
Alpena.	2	2.0	New York.	3		La Crosse.	7	18.5
Ann Arbor.	8		Oswego.	5	6.0	Lake Mills.	8	
Battle Creek.	9		Plattsburgh.	6		Madison.	9	
Big Rapids.	8		Poughkeepsie.	30		Medford.	1	
Calumet.	16		Rochester.	7	2.5	Milwaukee.	8	0.0
Chatham.	2		Saranac Lake.	15		Minocqua.	6	
Detroit.	8	2.0	Shortsville.	6		Mount Horeb.	8	
Escanaba.	T.	18.0	Syracuse.	9		Portage.	6	
Grand Haven.	7	0.0	North Dakota.	4		Racine.	8	
Grand Marais.	16		Bismarck.	T.	24.0	Sheboygan.	12	
Grand Rapids.	9		Devils Lake.	2		Spooner.	2	
Hillsdale.	8		Williston.	T.	26.5	Viroqua.	13	
Houghton.	15	11.5	Ohio.			Wyoming.		
Iron wood.	21		Bangorville.	5		Lander.	2	
Lansing.	10		Canal Dover.	3		Yellowstone Park.	11	

* Floating ice.

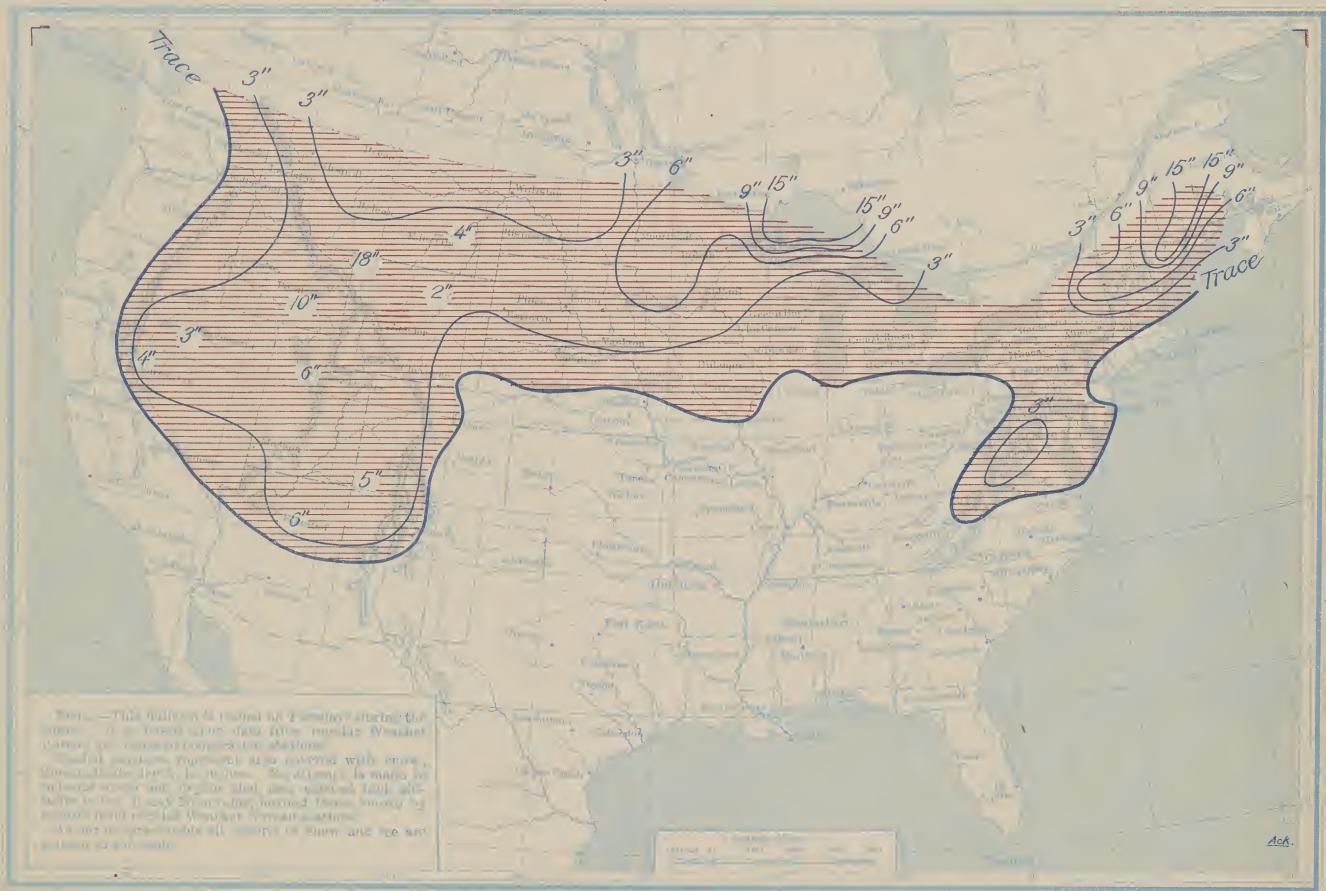
† Shore ice.

T. indicates trace.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., February 9, 1909.

DEPTH OF SNOW.

No appreciable amounts of snow occurred during the week prior to the 7th, and under the influence of comparatively warm weather much of the snow on the ground on the date of last issue disappeared from the lower Missouri and upper Mississippi valleys eastward to the Atlantic. From southern Wisconsin and northern Illinois eastward over lower Michigan, the lower Lakes, New York, and New England the decrease in depth ranged from 4 to 10 inches, and large areas in the above districts were practically bare of snow at 8 p. m. of the 8th. During the 7th snow from 3 to 7 inches occurred over a limited area from southern Virginia to southern Pennsylvania. At the same time a storm of wide extent developed on the north Pacific Coast, and by 8 p. m. of Monday had advanced southeastward to central Kansas, accompanied by heavy snows in portions of the middle Plateau and Rocky Mountain districts, and with prospects of continued snow over the northern portions of the Plains region and thence eastward as the storm area progresses.

The lower levels of the Plateau district are now generally snow covered, the depths ranging from 3 to 10 inches, and it is probable that heavy falls occurred in the higher elevations of that district, and also over large portions of the Rocky Mountain region.

Over New England and northern New York the depth ranges from 3 to 15 inches, with extreme depths of 12 inches in the Adirondacks and from 15 to 27 inches in central Maine. In northern Michigan and thence westward to eastern North Dakota the depth ranges from 6 to 15 inches.

ICE IN RIVERS, HARBORS, ETC.

The low temperature noted as prevailing over the central valleys and eastern districts at the close of January was followed early in the week by rising temperature over nearly all districts. Comparatively warm weather continued during the remainder of the week, except along the northern border between the Rocky Mountains and the Great Lakes, where an extensive area of cold developed on the morning of the 7th, and at this writing is spreading southeastward over the lower Missouri and upper Mississippi valleys.

Under the influence of the generally warm weather, considerable ice disappeared from the rivers of southern New England, and practically all that had formed during the preceding week in the Middle Atlantic States, Ohio Valley, and Lake region disappeared, and the main streams and harbors of those districts are now generally free of ice.

In the upper Mississippi and its tributaries and generally in the lower Missouri, there has been a decrease in thickness of from 1 inch to 3 inches. In the upper Missouri, the upper Lakes, and in interior and northern New England there has been a slight gain in thickness.

In the interior of New England the ice ranges from 12 to 22 inches in thickness, in the upper Mississippi from 3 to 18 inches, and in the upper Missouri from 12 to 27 inches.

The following special reports have been received:

Hartford, Conn., February 9.—The ground is bare in Connecticut. Farther up the Housatonic and Connecticut valleys the depth of snow ranges from a trace in Massachusetts to a foot in the upper Connecticut Valley. In the upper Connecticut River the ice has gained slightly in thickness.

Albany, N. Y., February 9.—The depth of snow in the Hudson and Mohawk valleys averages 2 inches. The thickness of ice averages 10 inches in the Hudson River and 6 inches in the Mohawk.

Pittsburg, Pa., February 8.—The depth of snow over the Kiskiminitas and Youghiogheny watersheds ranges from a trace to over 2 inches. There is no snow over the Allegheny and Beaver valleys.

Omaha, Nebr., February 8.—The ice in the Missouri River here is submerged, so measurement of its thickness is impracticable.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., FEBRUARY 8, 1909.

Sations.	Show.	Ice in rivers har- bors etc.	Sations.	Show.	Ice in rivers har- bors etc.	Sations.	Show.	Ice in rivers har- bors etc.
Arizona.	Inches	Inches	Michigan—Cont'd.	Inches	Inches	North Dakota.	Inches	Inches
Flagstaff.	6		Maple Ridge.	6		Bismarck.	1	26.0
Colorado.			Marquette.	4		Devils Lake.	2	
Denver.	T.		Newberry.	2		Williston.	1	27.0
Durango.	5		Port Huron.	T.	4.0	Oregon.		
Grand Junction.	T.		Saginaw.	2		Baker City.	2	
Delaware.			Sault Ste. Marie.	5	14.0	Pennsylvania.		
Millsboro.	2		St. Ignace.	4		Ephrata.	1	
Dist. of Columbia.			Woodlawn.	6		Erie.	T.	0.0
Washington.	2		Minnesota.			Gettysburg.	1	
Idaho.			Bird Island.	5		Harrisburg.	T.	
Boise.	T.		Collegeville.	5		St. Marys.	T.	
Pocatello.	10		Crookston.	5		Scranton.	T.	
Illinois.			Detroit.	6		Warren.	T.	
Chicago.	T.		Duluth.	1	22.0	South Dakota.		
Monmouth.	T.		Farmington.	2		Huron.	2	23.0
Iowa.			Fort Ripley.	8		Pierre.	4	20.0
Atlantic.	T.		Grand Meadow.	5		Rapid City.	3	
Carroll.	2		Hinkley.	3		Yankton.	4	16.5
Charles City.	1		Mankato.	6		Utah.		
Des Moines.	T.	7.5	Minneapolis.	T.		Modena.	T.	
Dubuque.	T.	8.5	Moorehead.	8	27.0	Salt Lake City.	6	
Keokuk.	T.	3.0	Reeds.	5		Vermont.		
Marshalltown.	T.		St. Paul.	1	16.5	Brattleboro.	2	12.0
Sioux City.	2	12.5	Montana.			Burlington.	2	5.0
Maine.			Harve.	1		Northfield.	4	
Bangor.	7	12.0	Helema.	T.		Virginia.		
Cornish.	12		Kalsipell.	3		Burke's Garden.	T.	
Danforth.	9		Miles City.	4		Dale Enterprise.	5	
Eastport.	T.	14.5	Nebraska.			Lincoln.	7	
Gardiner.	15	14.0	North Platte.	T.		Lynchburg.	T.	0.0
Greenville.	20	22.0	Omaha.	20		Mount Weather.	4	
Lewiston.	22	17.0	Nevada.			Richmond.	T.	0.0
Millinocket.	27		Reno.	4		Stephens City.	7	
Orono.	8		Tonopah.	2		Williamsburg.	2	
Portland.	7	0.0	Winnemucca.	3		Woodstock.	3	
Maryland.			New Hampshire.			Wytheville.	T.	
Baltimore.	T.	0.0	Bethlehem.	5		Washington.		
Easton.	2		Concord.	3	17.0	Spokane.	2	
Oakland.	T.		Keene.	3		West Virginia.		
Princess Anne.	T.		New Jersey.			Arbaville.	4	
Massachusetts.			Atlantic City.	2		Ellins.	T.	0.0
Adams.	T.		Bridgeton.	1		Romney.	1	
Amerist.	T.		Cape May.	2	0.0	Sutton.	T.	
Concord.	T.		New Mexico.			Weston.	T.	
Fitchburg.	T.		Santa Fe.	T.		Wisconsin.		
North Adams.	3		New York.			Ashland.	2	
Michigan.			Albany.	T.	3.5	Green Bay.	2	8.0
Alpena.	4	1.0	Beaver River.	12		Koepenick.	3	
Ann Arbor.	T.		Binghamton.	T.		La Crosse.	1	18.0
Big Rapids.	2		Buffalo.	1	*	Madison.	T.	
Calumet.	15		Geneva.	T.		Medford.	T.	
Chatham.	4		Ithaca.	2		Milwaukee.	T.	0.0
Detroit.	T.	3.0	Keuka Park.	T.		Mount Horeb.	2	
Escanaba.	T.	19.0	Lake Placid.	1		New London.	2	
Grand Haven.	1	0.0	Le Roy.	1		Portage.	T.	
Grand Marais.	17		Oswego.	5.0		Racine.	T.	
Grand Rapids.	T.		Plattsburgh.	2		Spooner.	1	
Houghton.	14	13.0	Port Jervis.	T.		Vienna.	2	
Ironwood.	20		Rochester.	T.	0.0	Wausau.	2	
Lansing.	T.		Saranac Lake.	6		Wyoming.		
Mackinaw City.	3		Syracuse.	T.		Sheridan.	2	
Mancelona.	1					Yellowstone Park.	18	
Manistee.	T.							

* Broken ice.

† Ice submerged.

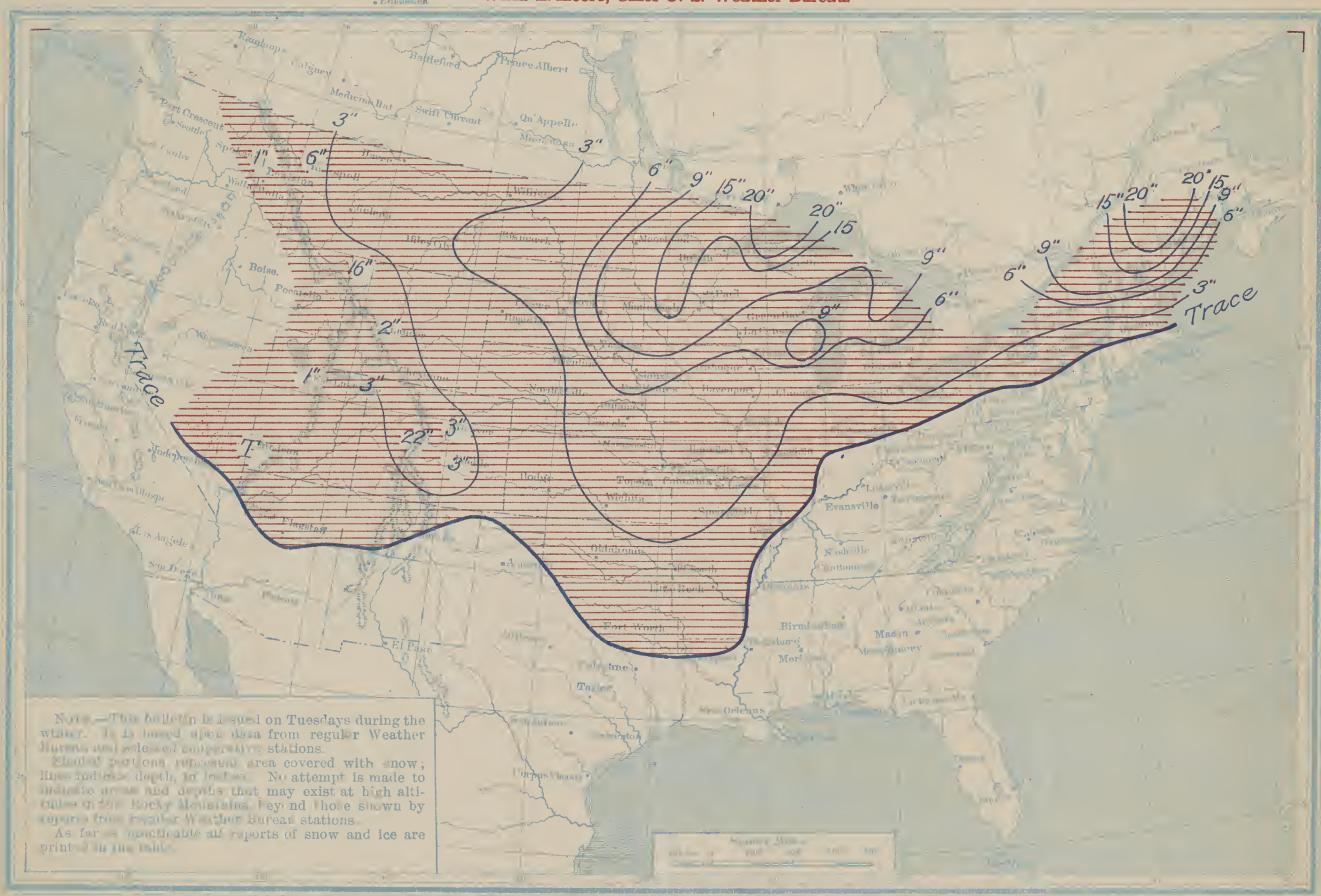
T. indicates trace.

U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU

SNOW AND ICE BULLETIN.

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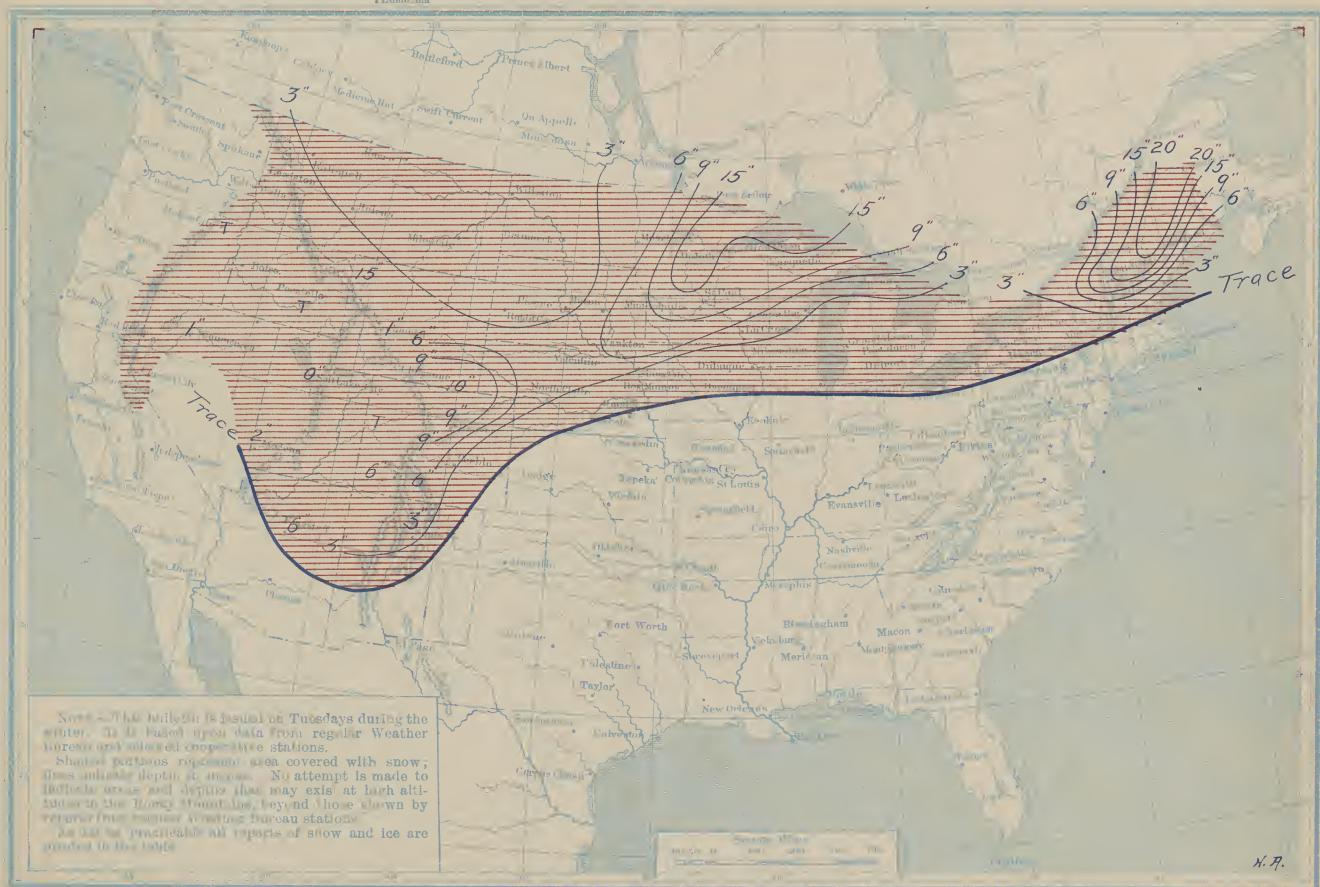
Willis L. Moore, Chief U. S. Weather Bureau.



SNOW AND ICE BULLETIN.

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Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., February 23, 1909.

DEPTH OF SNOW.

Since Monday of last week there have been considerable falls of snow in portions of the Ohio Valley, Lake region, and New England; but, on account of the moderate weather prevailing during most of the week, much of it has disappeared, and there is now generally less snow over those districts than one week ago, except in portions of the interior of New England and at a few points in the upper Lake region.

A storm that moved from the Pacific coast to the southern Rocky Mountain slope, from the 20th to the 22d, was accompanied by heavy snows in portions of the southern Plateau and central and southern Rocky Mountain region; and the increased depths in portions of those districts ranged from 2 to 9 inches. The snowfall from the above mentioned storm, over the mountain districts from southern Wyoming to northern New Mexico and over portions of eastern Colorado and western Nebraska, appears to have been unusually heavy. During the week a large amount of snow disappeared from the lower Missouri and middle and upper Mississippi Valley and Lake region, and a large area from northern Texas and Oklahoma to southern Nebraska and central Iowa, which was snow-covered a week ago, is now bare of snow.

From 6 to 15 inches of snow still remain in the upper Mississippi Valley and upper Lake region, and from 3 to 20 inches over northern New York and the interior of New England. Over the upper Missouri Valley there is but little snow on the ground and at the lower levels of the northern Rocky Mountain and Plateau districts there is only a slight covering.

ICE IN RIVERS, HARBORS, ETC.

The ice conditions have not changed materially since the issue of February 16. There has been a slight and rather general increase in thickness in the Lake region and at a few points in the upper Missouri River and northern New England.

In the upper Mississippi and its tributaries and in the lower Missouri there has been a general decrease in thickness ranging from 1 inch to 3 inches.

In the rivers of southern New England considerable ice disappeared during the week, and the lower portions of the Connecticut and Housatonic rivers are now free of ice, as well as the Hudson from Albany southward.

At 8 p. m. of the 22d there was no appreciable amount of ice in any of the main streams of the Middle Atlantic States, and the Ohio and its main tributaries were still free of ice.

In the Missouri the thickness of ice ranges from 15 inches at Omaha to 29 inches at Williston; in the Mississippi it ranges from 4 inches at Keokuk to 13 inches at St. Paul; in Lake Superior it ranges from 18 inches at the Soo to 25 inches at Duluth. The southern portion of Lake Michigan appears to be comparatively free from ice, but in the harbors of the northern portion the ice ranges from 10 to 22 inches in thickness. In the harbors of the lower Lakes the ice ranges from 2 to 8 inches in thickness and in the interior of New England from 15 to 22 inches.

The following special reports have been received:

Leviston, Me., February 22.—The depth of snow in fields is 20 inches, but in woods 30 inches.

Burlington, Vt., February 22.—The ice in the Connecticut River here has broken up.

Hartford, Conn., February 22.—The snow has very much increased in the extreme upper portion of the Connecticut Valley; elsewhere it is slowly disappearing. The Housatonic and Connecticut Rivers are materially higher. The Housatonic is free of ice and the Connecticut practically so to Holyoke, Mass., but remains unchanged above.

Albany, N. Y., February 22.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 8 inches at Corinth; in the Mohawk Valley it averages 2 inches. There is only running ice in the Hudson River south of Mechanicville, and the Mohawk is mostly open.

Hannibal, Mo., February 22.—There is a little floating ice and some shore ice in the Mississippi River here.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., FEBRUARY 22, 1909.

Stations.	Show.	Ice in rivers, har- bors, etc.	Stations.	Show.	Ice in rivers, har- bors, etc.	Stations.	Show.	Ice in rivers, har- bors, etc.	
Arizona.	Inches	Inches	Michigan—Cont'd.	Inches	Inches	New York—Cont'd.	Inches	Inches	
Flagstaff	6	.....	Port Huron	2	6.0	Malone	3	.....
Colorado.	.....	.....	Sault Ste. Marie	11	18.0	Oswego	1	4.0
Denver	9	.....	Woodlawn	14	.....	Rochester	1	0.0
Durango	6	.....	Minnesota.	.....	.....	Syracuse	2	.....
Grand Junction	T.	.....	Alexandria	18	.....	North Dakota.	.....	.....
Pueblo	1	.....	Bird Island	10	.....	Bismarck	2	31.5
Idaho.	.....	.....	Collegeville	16	.....	Devils Lake	4	.....
Pocatello	T.	.....	Crookston	4	.....	Williston	T.	23.0
Illinois.	.....	.....	Duluth	11	25.0	Ohio.	.....	.....
Chicago	T.	0.0	Faribault	9	.....	Cleveland	T.	0.0
La Salle	T.	.....	Farmington	8	.....	Sandusky	T.	3.0
Iowa.	.....	.....	Fort Ripley	18	.....	Tiffin	T.	.....
Atlantic	1	.....	Grand Meadow	15	.....	Toledo	2	2.0
Carroll	1	.....	Hinckley	6	.....	Wausau	2	.....
Charles City	T.	.....	Mankato	14	.....	Oregon.	.....	.....
Des Moines	T.	7.5	Milan	7	.....	Baker City	.....	.....
Dubuque	T.	11.5	Minneapolis	4	.....	Pennsylvania.	.....	.....
Humboldt	1	.....	Moorehead	30.0	.....	Erie	T.	3.0
Keokuk	4.0	.....	Reeds	8	.....	Montrose	T.	.....
Sioux City	8	18.0	St. Paul	6	13.0	South Dakota.	.....	.....
Maine.	.....	.....	Missouri.	.....	.....	Huron	2	25.0
Bangor	4	12.0	Hannibal	T.	*†	Pierre	T.	22.0	
Buckfield	27	.....	Montana.	.....	.....	Rapid City	1	.....
Eastport	T.	16.0	Kalispell	T.	.....	Yankton	6	16.0
Greenville	20	22.0	Miles City	.....	.....	Utah.	.....	.....
Lewiston	2	20.0	Nebraska.	.....	.....	Modena	1	.....
Millinocket	33	.....	Imperial	4	.....	Vermont.	.....	.....
Orono	8	.....	Lincoln	T.	.....	Brattleboro	4	0.0
Portland	7	0.0	Omaha	2	15.0	Burlington	5	9.0	
Massachusetts.	.....	.....	Tekamah	3	.....	Northfield	11	.....
Adams	1	.....	Valentine	2	.....	St. Johnsbury	16	.....
Amherst	T.	.....	Nevada.	.....	Wisconsin.	.....	.....
Concord	T.	.....	Winnebago	1	.....	Ashland	13	.....
Fitchburg	T.	.....	New Hampshire.	.....	Grand Rapids.	8	.....	
North Adams	2	.....	Bethlehem	7	.....	Green Bay	2	10.0
Michigan.	.....	.....	Concord	4	15.0	Koepenick	12	.....
Alpena	5	10.0	Durham	1	.....	La Crosse	2	17.0
Battle Creek	1	.....	Keene	3	.....	Madison	2	.....
Big Rapids	1	.....	New Mexico.	.....	Medford	7	.....	
Detroit	2	8.0	Grand Haven	T.	0.0	Milwaukee	.....	.....
Escanaba	5	22.0	T. 0.0	Santa Fe	3	New London	4
Grand Haven	1	.....	New York.	.....	Portage	3	.....	
Grand Rapids	1	.....	Albany	T.	0.0	Racine	T.	.....
Houghton	20	13.0	Buffalo	2	6.0	Viroqua	3	.....
Lansing	T.	.....	Canton	3	.....	Wyoming.	.....	.....
Mackinaw City	4	.....	Franklinville	2	.....	Cheyenne	10	.....
Mancelona	3	.....	Ithaca	T.	.....	Lander	1	.....
Marquette	10	7.0	Keuka Park	T.	.....	Sheridan	T.	.....
Onaway	5	.....	.....	.....	Yellowstone Park	15	.....	

* Shore ice.

† Floating ice.

T. indicates trace.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., March 2, 1909,

DEPTH OF SNOW.

Since the last issue of this bulletin considerable snow has fallen in the upper Mississippi Valley and in the vicinity of Lake Superior, and the depth of snow on the ground in those districts is now from 3 to 10 inches greater than on February 22d.

Over the remaining districts there has been a general reduction in the depth of snow as compared with last week, especially over the middle Missouri Valley and the central and southern portions of the Rocky Mountain and Plateau districts where, at the lower levels, from 3 to 10 inches of snow have disappeared.

Over the Great Plains and at the lower elevations of the Rocky Mountain and Plateau districts the ground is now generally bare of snow.

Special reports from the more elevated districts of the main mountain ranges of the west indicate that there have been numerous and heavy falls of snow in those districts and that much of it has drifted into the ravines and gulches, is well packed, and generally in such condition as to indicate its conservation until late in the season, thus affording ample water for irrigation, etc.

ICE IN RIVERS, HARBORS, ETC.

The continuation of warm weather during the last week of February prevented the formation of any additional ice, except along the extreme northern border where small increases were noted.

Several inches of ice disappeared from the Missouri River between Omaha and Pierre, and there was a general decrease in thickness over the upper portion of the Mississippi and its tributaries. In the lower Lakes there are several inches less ice than on February 22d, while in New England the conditions remain about as previously reported. No appreciable amounts of ice are reported from the main streams of the Middle Atlantic States and Ohio Valley.

In the Missouri the thickness of ice ranges from 16 inches at Sioux City to 29 inches at Williston; in the Mississippi from 11 inches at Dubuque to 12.5 at St. Paul; in the harbors of the upper Lakes the thickness ranges from 10 to 20 inches; in the lower Lakes from 2 to 7 inches, and over the rivers of northern New England the thickness ranges from 18 to 21.5 inches.

Reports from Maine indicate that the ice harvest is progressing slowly on account of unfavorable weather conditions.

The following special reports have been received; that from Detroit relates to the conditions existing throughout the Great Lakes and is a summary of a large number of reports collected at that station:

Gardiner, Me., March 1.—The low lands in the Kennebec Valley are covered with a heavy crust of snow; the uplands are partly free. Lumbering operations are being carried on to advantage owing to favorable weather. The Maine ice crop is being harvested very slowly owing to unfavorable weather; it is now about one-third housed.

Bridgewater, Vt., March 1.—The Connecticut River is open here.

Hartford, Conn., March 2.—The depth of snow in the Connecticut Valley ranges from a trace at Athens to 7 inches at Corinth; in the Mohawk from a trace at Cohoes to 2 inches at Little Falls. The Hudson River is open south of Glens Falls, and the Mohawk is mostly open.

Detroit, Mich., March 2.—In Lake Superior the ice fields extend out about 20 miles from Duluth, and there are small, broken fields over the central and eastern portions. In St. Marys River the ice is solid. In Green Bay the ice ranges from 10 to 22 inches in thickness; but in Lake Michigan as a whole the ice fields are small and broken up. In the Straits of Mackinac the ice is 20 inches thick and solid. In Lake Huron there are some ice fields north of Thunder Bay, but the southern portion is clear. Lake St. Clair is covered with about 7 inches of ice, but the Detroit River is open. In Lake Erie the fields are not heavy or extensive, and in Ontario no fields are reported. On all the Lakes many harbors are reported open. There is much less ice than at this date last year.

Des Moines, Iowa, March 1.—The ice in the Des Moines River along the city front has gone out, but above the city it remains 6 inches thick.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., MARCH 1, 1909.

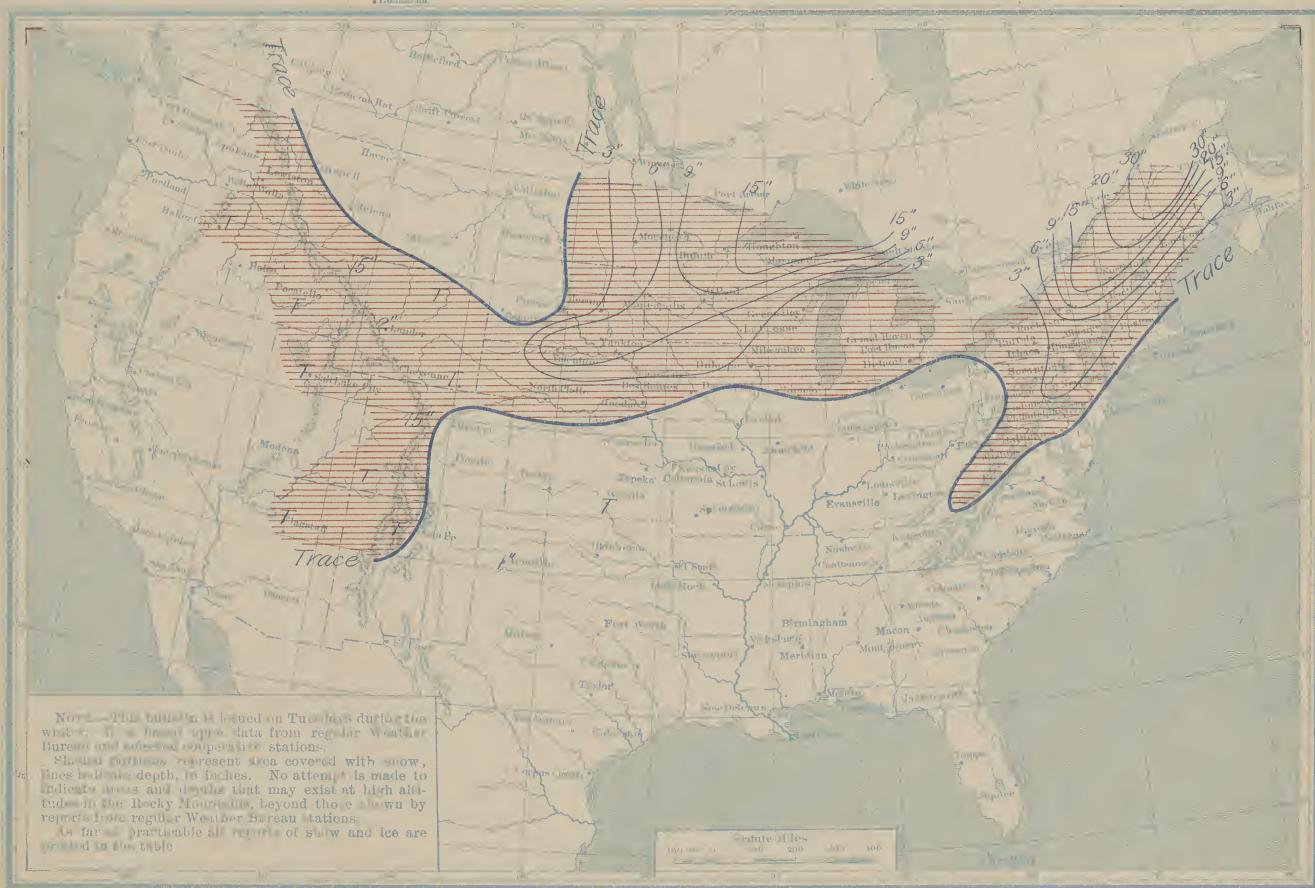
Stations.	Snow. Inches	Ice in rivers, har- bors, etc. Inches	Stations.	Snow. Inches	Ice in rivers, har- bors, etc. Inches	Stations.	Snow. Inches	Ice in rivers, har- bors, etc. Inches
Arizona.			Michigan—Cont'd.			New York—Cont'd.		
Flagstaff.	T.		Marquette.	21	6.0	Rochester.	1	0.0
Colorado.			Port Huron.	T.	5.0	Saranac Lake.	12	....
Durango.	T.		Saginaw.	T.		Syracuse.	T.	....
Leadville.	22		Sault Ste. Marie.	18	19.0	Watertown.	T.	....
Idaho.			S. Ignace.	5		North Dakota.		
Pocatello.	T.	0.0	Woollawn.	12		Bismarck.	T.	32.0
Wallace.	12		Minnesota.			Devils Lake.	6	
Illinois.			Alexandria.	10		Williston.	T.	23.0
Chicago.	T.		Bird Island.	12		Ohio.		
Iowa.			Collegeville.	8		Sandusky.		2.0
Charles City.	T.		Crookston.	4		Toledo.	T.	0.0
Dubuque.	T.	11.0	Detroit.	6		Wausau.	T.	....
Sioux City.	1	16.0	Duluth.	12	20.5	Erie.		2.0
Maine.			Faribault.	8		Montrose.	T.	....
Bangor.	2	12.0	Farmington.	15		Weisboro.	T.	....
Buckfield.	24		Fort Ripley.	21		South Dakota.		
Cornish.	14		Mankato.	19		Huron.	4	24.5
Danforth.	16		Milan.	5		Piermont.		20.0
Eastport.	T.	20.0	Minneapolis.	6		Yankton.	1	18.0
Gardner.	8	14.0	Moorhead.	7	30.0	Vermont.		
Greenville.	31	21.5	Reeds.	13		Brattleboro.	3	0.0
Lewiston.	22	21.5	St. Paul.	9	12.5	Burlington.	3	10.0
Millinocket.	30		Worthington.	4		Northfield.	10	
Orono.	5		Montana.			St. Johnsbury.	16	
Portland.	1	0.0	Kalispell.	T.		Virginia.		
Massachusetts.			Nebraska.			Dale Enterprise.	T.	
Adams.	T.		Valentine.	T.		West Virginia.		
Boston.			New Hampshire.			Arbavole.	T.	
Concord.	T.		Bethlehem.	5		Weston.	T.	
Fitchburg.	T.		Concord.	3	18.0	Wisconsin.		
North Adams.	2		Keene.	2		Ashland.	15	
Michigan.			New Mexico.			Eau Claire.	9	
Alpena.	4	11.0	Santa Fe.	T.		Grand Rapids.	12	
Battle Creek.	T.		New York.			Green Bay.	1	10.0
Big Rapids.	T.		Albany.	T.	0.0	Koepenick.	18	
Calumet.	31		Binghamton.	T.		La Crosse.	2	18.0
Chatham.	19		Buffalo.	1	4.0	Madison.	T.	
Detroit.	T.	7.0	Canton.	T.		Medford.	10	
Escanaba.	9	22.0	Cooperstown.	T.		New London.	T.	
Grand Haven.	T.	0.0	De Ruyter.	1		Portage.	T.	
Grand Marais.	28		Franklinville.	3		Sheboygan.	5	
Grand Rapids.	T.		Herkimer.	T.		Viروqua.	2	
Hillsdale.	T.		Ithaca.	T.		Wausau.	7	
Houghton.	27	13.0	Keuka Park.	T.		Wyoming.		
Ironwood.	34		Le Roy.	1		Cheyenne.	T.	
Mackinaw City.	4		Lowville.	3		Sheridan.	T.	
Mancelona.	4		Oswego.	T.	1.0	Yellowstone Park.	19	
Manistee.	1		Plattsburgh.	8				
Maple Ridge.	17							

T. indicates trace.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE

Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., March 9, 1909.

DEPTH OF SNOW.

During the storm of March 3 and 4 a large body of snow accumulated over the Atlantic coast States from the mountains of North Carolina and Virginia to New England, the depth of fall ranging from 4 to 10 inches. The amount of snow on the ground over the above district is now considerably greater than at the date of last issue of this bulletin, and the southern limit of snow on the ground is much farther south than at 8 p. m., March 1.

Some heavy local falls occurred during the 7th and 8th over portions of Nebraska, Iowa, and surrounding States, and heavy snow is falling at this writing in the lower Missouri and upper Mississippi valleys and upper Lake region, with prospects of the extension of the snow area to the lower Lakes.

During the week the depth of snow decreased from 3 to 10 inches from the eastern portions of North and South Dakota eastward over the upper Mississippi Valley to the Lake Superior district, and there was some reduction in the depths reported from points in the Rocky Mountain region.

But little snow appears to have fallen at the lower levels of the mountain and Plateau districts of the West, and the ground is bare or nearly so over those districts, as well as over the greater part of the Plains region, except over portions of Nebraska, South Dakota, and Iowa.

Over New England and the Middle Atlantic States the depth of snow ranges from about 3 inches in the mountains of Virginia to 15 inches in central New York and 30 inches or more in the interior of Maine.

Over the middle Missouri and upper Mississippi valleys and upper Lake region the depth ranges from 3 inches in the southern portions to about 20 inches in extreme northern Michigan.

ICE IN RIVERS, HARBORS, ETC.

The prevalence of moderate temperatures during the past week was unfavorable for the formation of any new ice, except at a few points along the northern border and in some of the rivers of interior New England.

In the lower portions of the Missouri and Mississippi rivers and their main tributaries the ice has largely disappeared, while in their upper portions the thickness has been materially reduced.

In the harbors of the lower Lakes considerable ice has disappeared, while in the interior of New England there has been a general increase, amounting to as much as 9 inches in the Connecticut River at Brattleboro, Vt. The Missouri River is now free of ice from Pierre southward; the Mississippi River from Dubuque southward; and the harbors of the southern portion of Lake Michigan are still open as well as most of those of lakes Erie and Ontario.

The harbors of Lake Superior are still ice-bound, as are also those of Lake Huron and northern Lake Michigan. Over the rivers of interior New England the ice ranges from 9 to 20 inches in thickness, and the weather has continued favorable for harvesting the ice crop.

The Hudson and its tributaries are generally free of ice, as well as other principal streams of the Middle Atlantic States and Ohio Valley. The following special reports have been received:

Gardiner, Me., March 8.—The weather continues favorable for ice and lumber operations.

Hartford, Conn., March 9.—The depth of snow in the Housatonic and Connecticut valleys ranges from a trace along Long Island Sound to 20 inches in northern New Hampshire and Vermont. The ice is gradually becoming thinner.

Albany, N. Y., March 9.—The depth of snow in the Mohawk and Hudson valleys averages about 4 inches. The Hudson River is open south of Glens Falls and the Mohawk is mostly open.

Binghamton, N. Y., March 9.—The depth of snow averages from 3 to 4 inches in the Unadilla and Tioughnioga watersheds, and from 4 to 5 inches in the Chenango and Susquehanna. The snow is drifted. The greatest average depth is 10 inches at Portlandville, N. Y. There is no ice in the rivers.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., MARCH 8, 1909.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	Michigan—Cont'd.	Inches	Inches	North Dakota—Con	Inches	Inches
Flagstaff.....	T.		Port Huron.....	T.	3.0	Devils Lake.....	5	
Colorado.			Sault Ste. Marie.....	15	19.0	Williston.....	26.0	
Durango.....	T.		Woodlawn.....	11		Ohio.	T.	
Leadville.....	15		Minnesota.			Toledo.....	T.	
Connecticut.			Bird Island.....	6		Oregon.	T.	0.0
Hartford.....	T.	0.0	Collegeville.....	7		Baker City.....	T.	
New Haven.....	T.		Crookston.....	2		Pennsylvania.		
Idaho.			Duluth.....	12	20.0	East Mauch Chunk.....	T.	
Pocatello.....	T.		Faribault.....	T.		Ephrata.....	4	
Illinois.			Farmington.....	3		Erie.....		2.0
Chicago.....	T.		Fort Ripley.....	15		Gettysburg.....	1	
La Salle.....	T.	0.0	Hinckley.....	2		Gordon.....	T.	
Indiana.			Mankato.....	14		Harrisburg.....	2	
Knox.....	1		Milan.....	1		Mifflintown.....	2	0.0
Iowa.			Minneapolis.....	1		Seranton.....	1	
Atlantic.....	T.		Moorehead.....	2	30.0	Towanda.....	T.	
Charles City.....	5		Reed.....	3		Wellsville.....	T.	
Creston.....	T.		St. Paul.....	1	9.5	Williamsport.....	T.	
Des Moines.....	1	0.0	Worthington.....	4		Rhode Island.		
Dubuque.....	1	+	Nebraska.			Narragansett.....	T.	
Marshalltown.....	3		Columbus.....	T.		South Dakota.		
Sioux City.....	3	0.0	Imperial.....	1		Huron.....	T.	*
Waterloo.....	4		Lincoln.....	T.		Yankton.....	7	0.0
Kansas.			Norfolk.....	1		Texas.		
Wichita.....	T.		North Platte.....	T.		Amarillo.....	1	
Maine.			St. Paul.....	T.	0.0	Utah.		
Bangor.....	3	12.0	Valentine.....	9		Salt Lake City.....	T.	
Buckfield.....	29		York.....	T.		Vermont.		
Cornish.....	18		New Hampshire.			Brattleboro.....	4	9.0
Danforth.....	14		Eastport.....	19.0		Burlington.....	8	13.5
Gardiner.....	10	14.0	Bethlehem.....	10		Northfield.....	15	
Greenville.....	36	20.5	Concord.....	15	19.0	St. Johnsbury.....	16	
Lewiston.....	26	22.0	Keene.....	4		Virginia.		
Milfinton.....	34		New Jersey.			Burke's Garden.....	T.	
Orono.....	9		Belvidere.....	3		Dale Enterprise.....	4	
Portland.....	3	0.0	Bridgeton.....	T.		Woodstock.....	T.	
Maryland.			Charlotteburg.....	1		West Virginia.		
Easton.....	T.		Highstown.....	T.		Arbovale.....	T.	
Oakland.....	T.		New Mexico.			Wisconsin.		
Massachusetts.			Santa Fe.....	T.		Ashland.....	12	
Adams.....	2		New York.			Eau Claire.....	4	
Amherst.....	T.		Albany.....	2	0.0	Grand Rapids.....	7	
Concord.....	T.		Binghamton.....	3		Green Bay.....	T.	8.0
Fitchburg.....	T.		Buffalo.....	1	*	Koepenick.....	15	
Mansfield.....	T.		Canton.....	6		La Crosse.....	T.	14.0
Michigan.			Franklinville.....	1		Lake Mills.....	1	
Alpena.....	1	12.0	Herkimer.....	5		Madison.....	T.	
Ann Arbor.....	T.		Ithaca.....	T.		Medford.....	5	
Big Rapids.....	T.		Oswego.....	2	2.5	Portage.....	T.	
Detroit.....	6.0		Plattsburgh.....	15		Sheboygan.....	T.	
Escanaba.....	2	22.0	Rochester.....	T.	0.0	Spooner.....	7	
Grand Rapids.....	T.		Rome.....	1		Viroqua.....	1	
Hillsdale.....	T.		Saranac Lake.....	18		Wausau.....	4	
Houghton.....	23	12.0	Setaneket.....	3		Wyoming.		
Mackinaw City.....	4		Syracuse.....	7		Cheyenne.....	T.	
Mancelona.....	1		Watertown.....	6		Lander.....	2	
Marquette.....	18	8.5	North Dakota.			Sheridan.....	T.	
			Bismarck.....	T.	26.0	Yellowstone Park.....	15	

* Floating ice.

† Shore ice.

T. indicates trace.

Dubuque, Iowa, March 8.—Below the drawbridge there is only shore ice, but the Mississippi River is still frozen above the bridge.

Des Moines, Iowa, March 8.—The ice in the Des Moines River broke and moved out on the 2d.

Yankton, S. Dak., March 8.—The Missouri River in this vicinity is clear of ice.

Huron, S. Dak., March 8.—There is floating ice in the James River; measurements are impossible, as the river is out of its banks.

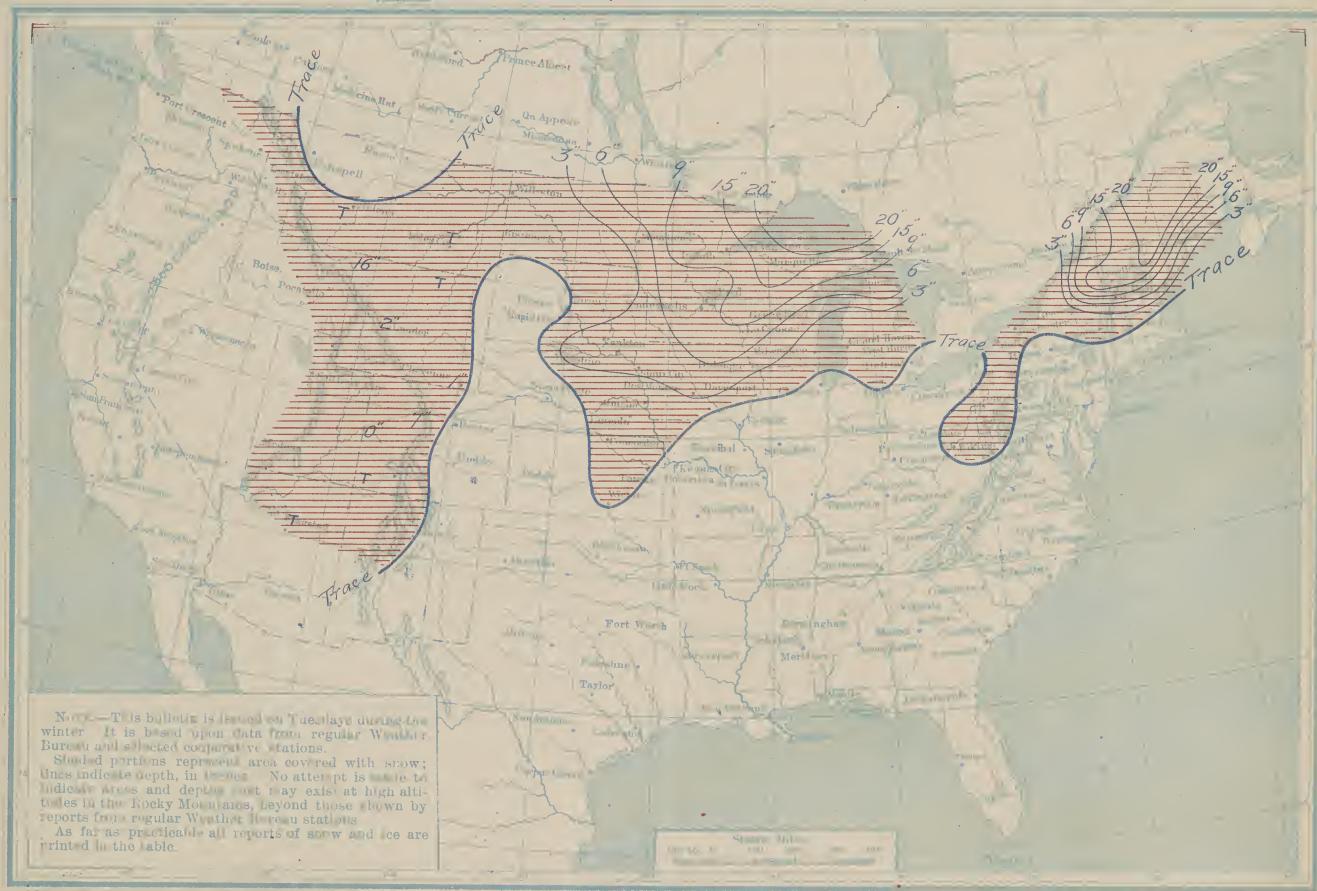
P. C. DAY, Acting Chief of Division.

U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU.

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., March 16, 1909.

DEPTH OF SNOW.

The storm central in the middle Mississippi Valley on the morning of the 9th, in connection with which heavy snow was falling in the lower Missouri and upper Mississippi valleys and upper Lake region, as noted in the last issue of this bulletin, moved northeastward over the southern portions of the Lake region during the 10th, with some heavy falls of snow from the lower Missouri Valley to the upper Lakes, and heavy rains in the Ohio and middle Mississippi valleys.

Some light snows occurred during the week in other localities, but the amounts of snow on the ground have not materially changed except in New England and the Middle Atlantic States, where from 2 to 5 inches have disappeared, and in portions of Nebraska, South Dakota, Iowa, and northern Minnesota where the depths are now several inches less than were reported last week. No general storm has prevailed in the mountain districts of the West during the week, and no increase in the amount of snow stored in those regions has probably occurred.

The temperature appears to have been sufficiently low to prevent any rapid melting of the snow already collected, and it is therefore probable that no material change has occurred in the favorable outlook for a plentiful supply of water previously reported from most of the mountain districts.

The snow covering has largely disappeared from the Middle Atlantic States and southern New England, but there is a covering of from 10 to 20 or more inches still on the ground in northern New York and the interior of New England, and from 5 to 20 inches in the upper Mississippi Valley and upper Lake region.

ICE IN RIVERS, HARBORS, ETC.

The continuation of moderate temperatures during the week prevented the formation of any new ice, except in a few scattered localities in the upper Lake region and upper Mississippi Valley, and the amount of ice generally is less than reported last week.

Practically all ice has disappeared from the harbors of the lower Lakes, and a large amount has disappeared from Lake Huron and portions of northern Lake Michigan. In Lake Superior there has been no material change, the harbors still remaining ice-bound, the thickness ranging from 10 to nearly 20 inches.

The Missouri River is open from Pierre southward, and the Mississippi south of Dubuque. In New England the ice is rapidly disappearing from the upper portion of the Connecticut, but in the interior of Maine there has been no material change and the ice harvest still continues, but under adverse weather conditions.

The following special reports have been received; that from Detroit relates to the conditions existing throughout the Great Lakes, and is a summary of a large number of reports collected at that station:

Greenville, Me., March 15.—About 16 inches of snow lie, not included in the measurement, lies on top of the hard ice.

Gardiner, Me., March 15.—The lowlands in the Kennebec Valley are covered with heavy snow, but the uplands are mostly free. Lumber operations are yet being carried on, as the weather is favorable; also ice harvesting continues altho the weather is not very favorable.

Lewiston, Me., March 15.—In the woods the snow is 24 inches deep; outside there are drifts and bare ground.

Hartford, Conn., March 15.—There has been a slight decrease in the snow covering. The ground is bare in Connecticut and most of Massachusetts. Ice in the upper Connecticut River is decreasing rapidly.

Albany, N. Y., March 15.—In the Hudson Valley the depth of snow ranges from a trace at Athens to 6 inches at Corinth; in the Mohawk Valley it ranges from a trace at Cohoes to 3 inches at Utica. The Hudson and the Mohawk rivers are mostly open.

Pittsburg, Pa., March 15.—The average depth of snow on the ground over the Allegheny watershed is about 1 inch; over the Monongahela from a trace to 2 inches.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., MARCH 15, 1909.

Stations.	Snow. Inches T.	Ice in rivers, har- bors, etc. Inches T.	Stations.	Snow. Inches T.	Ice in rivers, har- bors, etc. Inches T.	Stations.	Snow. Inches T.	Ice in rivers, har- bors, etc. Inches T.
<i>Arizona.</i>			<i>Michigan—Cont'd.</i>	Inches Newberry..... 12	Inches Port Huron..... 2.0	<i>New York—Cont'd.</i>	Inches Syracuse..... T.	Inches North Dakota.....
Flagstaff.....	T.		Sault Sta. Marie..... 15		T.	Bismarck..... 2	21.0	
<i>Colorado.</i>			St. Ignace..... 4			Devils Lake..... 6		
Durango.....	T.		Woodlawn..... 16			Williston..... 1	26.0	
Leadville.....	7							
<i>Illinois.</i>								
La Salle.....	T. 0.0							
<i>Iowa.</i>								
Atlantic..... 3			Alexandria..... 10			Ohio.		
Charles City..... 11			Bird Island..... 5			Philo..... T.		
Creston..... 1			Collegeville..... 5			Waukeson..... T.		
Davenport..... T. 0.0			Crookston..... 1			<i>Pennsylvania.</i>		
Des Moines..... 5	0.0		Detroit..... 6			Franklin..... 1		
Dubuque..... 1	0.0		Duluth..... 12	18.5		Greenville..... 1		
Marshalltown..... 5			Fairbault..... 3			Indiana..... T.		
Sioux City..... 2	0.0		Farmington..... 5			Latrobe..... T.		
Waterloo..... 8			Fort Ripley..... 9			Parker..... 2		
			Grand Meadow..... 5			Pittsburg..... T.	0.0	
			Hinckley..... 2			Somerset..... T.		
			Mankato..... 12			<i>South Dakota.</i>		
Concordia..... T.			Minneapolis..... 1			Huron..... 1	*	
Topeka..... T.			Moorhead..... 2	30.0		Yankton..... 3	†	
Wichita..... T.			Reeds..... 9			<i>Vermont.</i>		
			St. Paul..... 2	9.0		Brattleboro..... 2	0.0	
			Worthington..... 1			Burlington..... 3	12.0	
						Northfield..... 10		
						St. Johnsbury..... 16		
						<i>West Virginia.</i>		
						Elkins..... T.	0.0	
						Fairmont..... T.		
						New Martinsville..... T.		
						Sutton..... T.		
						Weston..... T.		
						<i>Wisconsin.</i>		
						Ashland..... 10		
						Eau Claire..... 10		
						Grand Rapids..... 18		
						Green Bay..... 4	4.0	
						Koepenick..... 24		
						La Crosse..... 16.0		
						Lake Mills..... T.		
						Madison..... 2		
						Medford..... 12		
						Milwaukee..... T.	0.0	
						Mount Horeb..... 3		
						New London..... 14		
						Portage..... 4		
						Spooner..... 2		
						Wausau..... 12		
						<i>Wyoming.</i>		
						Cheyenne..... 1		
						Lander..... 2		
						Sheridan..... T.		
						Yellowstone Park..... 16		

* Ice submerged.

† Shore ice.

T. indicates trace.

Detroit, Mich., March 16.—In western Lake Superior the ice fields extend beyond vision; in the central portion few fields are intact; the ice fields in the eastern portion and Whitefish Bay show no change. In St. Marys River and Green Bay the ice is from 12 to 22 inches thick, covered with snow. No change has occurred at the Straits of Mackinac, where the ice is 20 inches thick. In Lake Huron the ice fields in the northern portion are disappearing, but in the extreme southern portion the fields extend beyond vision. The St. Clair River is open to Marine City, and the ice is moving slowly out of Lake St. Clair. In Lake Erie there is practically no ice in the western portion, except around the islands, while in the eastern portion the fields are drifting with the wind and are light; no change has occurred in this section. In Lake Ontario but few fields are reported. In comparison with this date last year there is now less ice in Superior, Michigan, and Huron, but the ice at the Straits is 8 inches thicker; there is this year some more ice in Erie, and about the same in Ontario.

Dubuque, Iowa, March 16.—The Mississippi is still frozen above the drawbridge; there is no ice below the bridge.

Yankton, S. Dak., March 16.—There is some shore ice in the Missouri River here, but the main channel is clear.

Buron, S. Dak., March 16.—Ice measurements are impracticable as the approaches to the river are flooded.

F. H. BIGELOW, Professor of Meteorology.

Mar. 10/9

SNOW AND ICE BULLETIN.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., March 23, 1909.

DEPTH OF SNOW.

Light snows were general over the Lake region on the 16th and in northern New York and New England on the 19th and 20th, aside from which but little snow occurred during the period since the last issue of this bulletin.

From 2 to 6 inches of snow has disappeared from the lower Missouri and upper Mississippi valleys and upper Lake region, and the depth has been generally reduced in the mountain districts of the West, probably by settling without material loss of water content.

Over northern New York and the interior of New England there has been a general increase in the depth, ranging from 1 inch over the southern portions to 12 inches in central Maine.

The areas now covered with snow to any considerable depths are confined to the interior and northern portions of New York and New England, where the depths range from about 3 inches in the southern portions to more than 3 feet in portions of Maine, and in the upper Mississippi Valley and upper Lake region, where the depths range from 3 inches in the more southern districts to 20 or more inches in northern Michigan. Over the western districts the snow has disappeared from the plains and the lower levels of the mountains, but the continued cool weather has prevented any rapid melting of that already stored in the higher ranges.

ICE IN RIVERS, HARBOURS, ETC.

Rather cool weather for the season of the year prevailed during the past week from the Lake region eastward, and slight increases occurred in the thickness of ice at a few points in the upper Lake region and in the interior of New England.

A large amount of ice has disappeared from the upper portions of the Mississippi and Missouri rivers, the Mississippi now being generally open as far north as Minneapolis and the Missouri throughout most of its course, except in the vicinity of Bismarck.

The harbors of Lake Superior are still ice bound, the thickness of the ice ranging from 10 to about 20 inches; those of the remaining lakes are generally open, except in northern Michigan and the Straits of Mackinac, where heavy ice still remains.

Over New England, especially in Maine and the northern portions of New Hampshire and Vermont, the ice conditions remain practically unchanged and the ice harvest is progressing slowly.

The following special reports have been received; that from Detroit relates to the conditions existing throughout the Great Lakes and is a summary of a large number of reports collected at that station:

Gardiner, Me., March 23.—Ice cutting on the Kennebec River is being carried on in a small way from sheltered localities.

Lewiston, Me., March 22.—The snow lies in drifts, so can not well be measured.

Hartford, Conn., March 23.—The ice and snow are disappearing slowly. Much hard snow, with abundant water equivalent, yet remains in the mountains of New Hampshire and Vermont.

Albany, N. Y., March 23.—In the Hudson Valley the depth of snow averages 4 inches from Glens Falls to Thurman; in the Mohawk Valley it ranges from 1 inch at Tribes Hill to 4 inches at Utica. The Hudson and Mohawk rivers are open.

Millindown, Pa., March 22.—There is snow on the adjacent mountain tops, while in the valleys occasional drifts remain.

Detroit, Mich., March 23.—In Lake Superior the ice field over the western portion has decreased slightly; that over the eastern portion has increased. The cold weather is holding the ice firm in Whitefish Bay and St. Marys River. Conditions in Green Bay are unchanged. In Lake Michigan there is a small field in the extreme southeastern portion. At the Straits of Mackinac the ice remains unchanged, 20 inches thick. In Lake Huron there is less ice over the northern portion, and open water south of Middle Island; while the field over the southern portion has decreased. The St. Clair River is open to below Marine City. The ice is running rapidly out of Lake St. Clair, and the Detroit River is open. In Lake Erie there is now no ice in the western portion, except about the Islands; but ice-fields extend along the southern shore from Ashtabula to Buffalo. In Lake Ontario there are a few fields over the central portion, and the harbors are opening more. In comparison with this date last year there is now less ice in all the lakes, but the cold weather is holding conditions unchanged; at the straits the ice is heavier than last year.

St. Paul, Minn., March 22.—The Mississippi River is open to Minneapolis.

La Crosse, Wis., March 23.—The ice along the banks is melted, so measurements are impracticable.

Huron, S. Dak., March 22.—There is much open water in the James River here, and the ice remaining is rotten.

F. H. BIGELOW, Professor of Meteorology.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., MARCH 22, 1909.

Stations.	Snow.	Ice in rivers, har- bours, etc.	Stations.	Snow.	Ice in rivers, har- bours, etc.	Stations.	Snow.	Ice in rivers, har- bours, etc.
Arizona.	Inches	Inches	Michigan—Cont'd.	Inches	Inches	New York—Cont'd.	Inches	Inches
Flagstaff	T.		St. Ignace	4		Saranac Lake	20	
Colorado.			Woollawn	15		Syracuse	1	
Leadville	T.		Minnesota.			Watertown	2	
Iowa.			Alexandria	5		North Dakota.		
Charles City	2		Bird Island	3		Bismarck		7.5
Des Moines	T. 0.0		Collegeville	4		Devils Lake	2	
Dubuque	T. 0.0		Crookston	1		Pennsylvania.		
Marysville	T.		Detroit	3		Mifflintown	*	
Waterloo	3		Duluth	11	16.0	Monroe	T.	
Maine.			Faribault	1		Wellsboro	T.	
Bangor	3	12.0	Farmington	2		South Dakota.		
Buckfield	24		Fort Ripley	8		Huron		
Danforth	18		Grand Meadow	*10		Yankton	T.	†
Eastport	1	16.0	Hinckley	T.		Utah.		
Gardiner	7	10.0	Mankato	8		Modena	T.	
Greenville	42	20.5	Milan	T.		Vermont.		
Lewiston	*	21.0	Minneapolis	T.		Brattleboro	2	1.0
Millinocket	40		Moosehead	T.	30.0	Burlington	4	12.5
Portland	1	0.0	Reeds	2		Northfield	10	
Massachusetts.			St. Paul	T. 0.0		St. Johnsbury	14	
Adams	T.		Nevada.			Virginia.		
Michigan.			Topopah	1		Dale Enterprise	1	
Alpena	T. 0.0		New Hampshire.			Wisconsin.		
Calumet	22		Bethlehem	13		Ashland	8	
Chatham	11		Concord	2	6.0	Eau Claire	5	
Escanaba	1	25.0	Keene	1		Green Bay	T. 0.0	
Grand Marais	36		New Mexico.			Koopernick	15	
Grand Rapids	T.		Santa Fe	T.		La Crosse	T.	‡
Houghton	15	16.0	New York.			Madison	T.	
Ironwood	20		Buffalo	T. 0.0		Medford	‡	
Mackinaw City	3		Canton	4		Minoqua	15	
Mancolona	4		De Ruyter	2		New London	4	
Maple Ridge	18		Franklinville	T.		Portage	T.	
Marquette	19	10.5	Herkimer	T.		Viroqua	T.	
Menominee	10		Le Roy	T.		Wyoming.		
Newberry	10		Ogdensburg	12		Cheyenne	T.	
Port Huron			Plattsburg	6		Yellowstone Park	12	
Sault Ste. Marie	12	19.0	Rochester	T. 0.0				

*Snow in drifts.

† Floating ice.

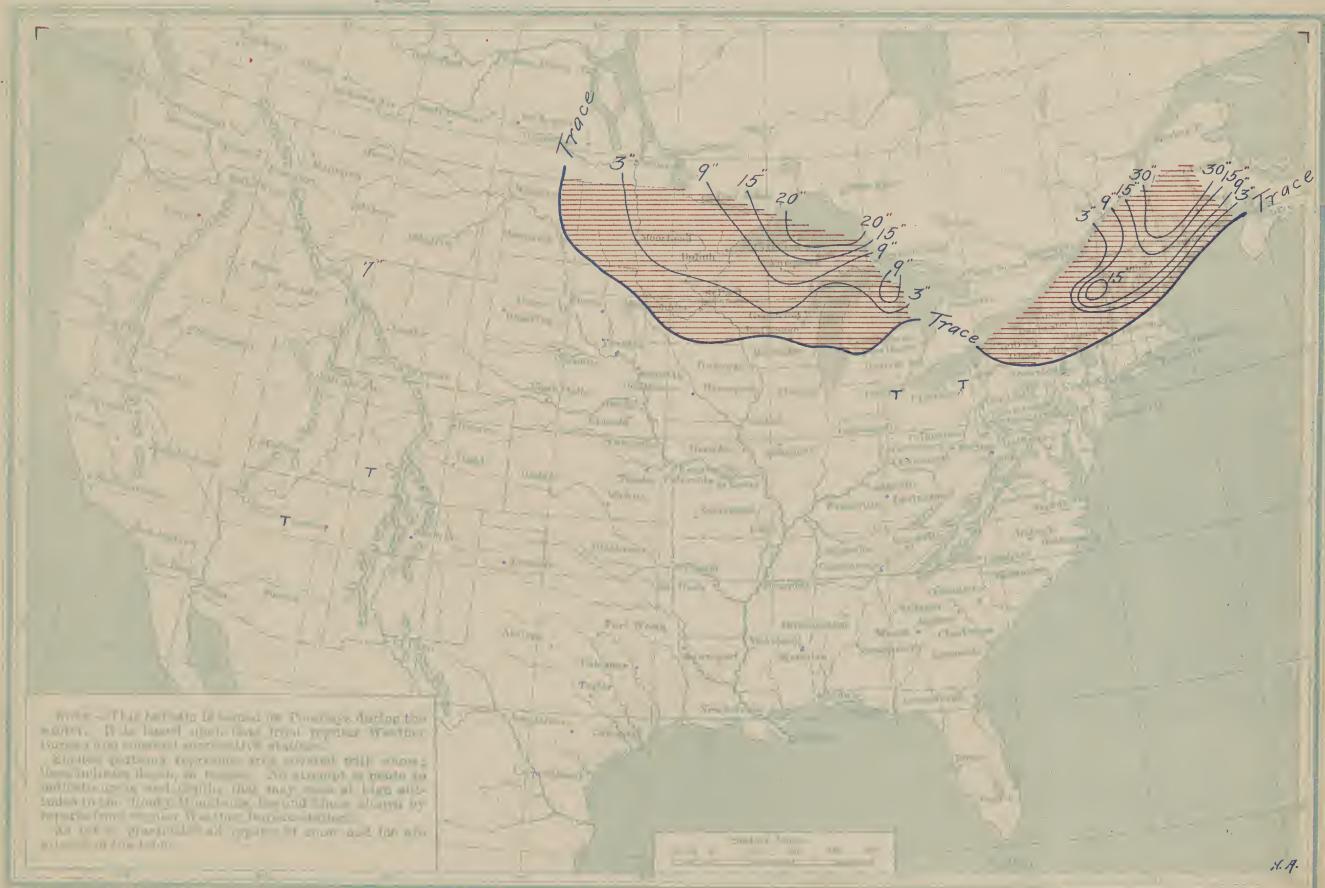
‡ Measurement impracticable.

T. indicates trace.

SNOW AND ICE BULLETIN.

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Willis L. Moore, Chief U. S. Weather Bureau.



WASHINGTON, D. C., March 30, 1909.

DEPTH OF SNOW.

During the week ending 8 p. m., March 29, 1909, considerable snow occurred from the Lake region and Ohio Valley northeastward over Pennsylvania and New York to New England, in connection with a wide area of precipitation that moved eastward over those districts during the 25th and 26th. General, but rather light, snows occurred in the northern Rocky Mountain region during the 28th, extending eastward over the upper portions of the Missouri and Mississippi valleys and the upper Lake region by the morning of the 29th.

No general storm prevailed over the mountain regions of the west during the week, and with the moderately cool weather prevailing it is probable no marked change has occurred in the snowfall conditions previously reported.

The greater part of the snow that fell during the week did not remain on the ground for any considerable period, and only at a few points in the more northern districts is the depth greater than was reported last week.

Over most of the upper Mississippi Valley, upper Lake region, and New England there has been a general decrease in the depth of the snow covering, ranging from 1 to 5 inches.

Deep snow still covers the ground in northern New York, and in the interior and northern portions of the New England States, and generally in the northern portions of Michigan, Wisconsin and Minnesota.

In the mountain and Plateau regions of the West the snow has disappeared from the lower elevations, but the indications are that the stock of snow in the high ranges is generally above the average and its condition such as to assure a plentiful supply of water for the coming season.

ICE IN RIVERS, HARBORS, ETC.

In the absence of any marked increase in temperature during the past week, there has been no decided change in the ice conditions, except the gradual disintegration due to the approach of spring.

Small decreases have occurred in the ice thickness on the streams of interior New England and in the upper Lake region, and the ice has generally disappeared from the harbors of the lower Lakes and the main channels of the Mississippi and Missouri rivers, except in the upper Missouri, where at points in North Dakota considerable ice still remains. Heavy ice still covers the Red River of the North, the thickness at Moorhead, Minn., being more than 2 feet. The harbors of Lake Superior and those in the vicinity of the Straits of Mackinac are still ice bound, the thickness of the ice ranging from 10 to 20 inches.

Special reports from the Lake region indicate the general breaking up of the small ice fields in Lakes Erie and Ontario and the southern portions of Lakes Huron and Michigan, but no material change in the ice fields of Lake Superior, the St. Marys River, and the Straits of Mackinac.

The following special reports have been received; that from Detroit relates to the conditions existing throughout the Great Lakes and is a summary of a large number of reports collected at that station:

Lewiston, Me., March 29.—The ice in the Androscoggin River here is breaking up.

Battleboro, Vt., March 29.—Some snow remains back on the hills.

Hartford, Conn., March 30.—The snow is gradually disappearing. Reports received here show depths ranging from 1 inch at the northern boundary of Massachusetts to 17 inches at the Connecticut lakes.

DEPTH OF SNOW AND THICKNESS OF ICE AT 8 P. M., MARCH 29, 1909.

Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.	Stations.	Snow.	Ice in rivers, har- bors, etc.
Arizona.	Inches	Inches	Michigan—Cont'd.	Inches	Inches	New York—Cont'd.	Inches	Inches
Flagstaff	T.	.....	Woodlawn	17	.....	Saranac Lake	15	.....
Colorado.	.....	.....	Bird Island	T.	.....	Syracuse	T.	.....
Durango	T.	.....	Crookston	4	.....	Watertown	T.	.....
Maine.	.....	.....	Detroit	4	.....	Wadsworth	T.	.....
Bangor	T.	9.0	Duluth	7	14.5	Bismarck	T.	8.5
Cornish	12	.....	Fairbank	T.	.....	Devils Lake	1	.....
Danforth	11	.....	Fort Ripley	1	.....	Williston	1	.....
Eastport	13.0	.....	Farmington	5	.....	Ohio . . . .	.....	.....
Greenville	46	20.5	Grand Meadow	4	.....	Cleveland	T.	0.0
Lewiston	T.	1	Mankato	2	.....	Wauseon	T.	.....
Millinocket	34	.....	Milan	T.	.....	Vermont . . . .	.....	.....
Orono	3	.....	Minneapolis	T.	.....	Burlington	1	12.0
Massachusetts.	.....	.....	Moorhead	T.	25.0	Northfield	8	.....
Adams	T.	.....	St. Paul	T.	0.0	St. Johnsbury	10	.....
Michigan.	.....	.....	New Hampshire	12	.....	Wisconsin . . . .	.....	.....
Alpena	T.	0.0	Bethlehem	T.	.....	Ashland	6	.....
Big Rapids . . . .	.....	.....	Concord	T.	0.0	Eau Claire	T.	.....
Calumet	24	.....	Keele	T.	.....	Grand Rapids	12	.....
Chatham	10	.....	New York . . . .	.....	.....	Koepenick	10	.....
Escanaba	T.	20.0	Buffalo	T.	0.0	La Crosse . . . .	.....	*
Grand Haven	T.	0.0	Canton	1	.....	Lake Mills	T.	.....
Grand Marais	20	.....	Cooperstown	T.	.....	Medford	2	.....
Grand Rapids	T.	.....	Franklinville	1	.....	New London	T.	.....
Houghton	14	15.0	Mancelona	T.	.....	Viroqua	3	.....
Mackinaw City	2	.....	Herkimer	T.	.....	Wausau . . . .	.....	.....
Mapse Ridge	11	.....	Ithaca	T.	.....	Wyoming . . . .	.....	.....
Marquette	14	8.5	Lake Placid	24	.....	Sheridan	T.	.....
Sault Ste. Marie	4	19.0	Rochester	T.	0.0	Yellowstone Park	7	.....
St. Ignace	2	.....	.....	.....	.....	.....	.....	.....

* Shore ice. † Measurement impracticable. T. indicates trace.

Albany, N. Y., March 30.—In the Hudson Valley the depth of snow ranges from a trace at Glens Falls to 2 inches at Thurman; in the Mohawk Valley it ranges from 1 inch at Tribes Hill to 3 inches at Utica, but the depth in the Sacandaga Valley averages 17 inches.

Detroit, Mich., March 30.—In Lake Superior the ice field over the extreme western portion is decreasing; there are few small fields in the central portion, while in the eastern portion there has been no material change. In St. Marys River and Green Bay conditions are unchanged. In Lake Michigan no ice is reported south of Harbor Springs. In the Straits of Mackinac the ice is 20 inches thick and solid. In Lake Huron there are a few fields in the northern and in the extreme southern portions, but the St. Clair River and Lake St. Clair are free of ice. In Lake Erie there is no ice over the western half, while the field extending from Conneaut to Buffalo is decreasing and breaking up. In Lake Ontario the field is confined to the extreme eastern portion, and the harbors are all open. In comparison with last year, the ice is now heavier in St. Marys River, Green Bay, and the Straits of Mackinac; also there is more ice in the eastern portion of Lake Erie.

Minneapolis, Minn., March 30.—Considerable snow remains in the woods in the southern portion of this State.

La Crosse, Wis., March 30.—The channel of the Mississippi River here is clear of ice, but the rest of the river is still frozen.

Huron, S. Dak., March 29.—There has been no ice in the James River here since Friday, the 26th instant.

Williston, N. Dak., March 29.—There is no ice along the banks of the Missouri River here, so the ice in the middle of the river can not be measured.

F. H. BIGELOW, Professor of Meteorology.

NOTE.—This will be the last bulletin of this series for the season of 1908-9.